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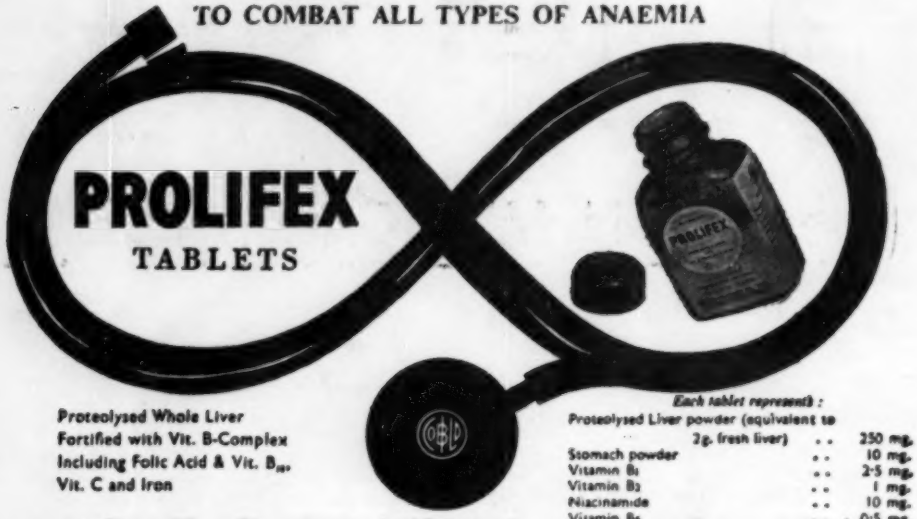

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TABLE OF CONTENTS

ORIGINAL ARTICLES: Page

1. Histopathology of the Liver in Thalassaemia Syndrome—A. M. Mukherjee, P. C. Sen Gupta and J. B. Chatterjea 291
2. A Study of 1,000 Cases of Smallpox —A. Ramachandra Rao, I. Prahlad and M. Swaminathan 296
3. Snake Bite and its Treatment—K. L. Wig and S. K. Vaish 307

PRACTITIONERS' SERIES:

Pregnancy and Acute Abdomen—Manindranath Sarkar 311

SPECIAL ARTICLE:

The Population Problem in India—B. G. Prasad ... 313

CASE NOTE:

Gumma of the Heart—C. M. Rangam, R. R. Bhagwat and C. R. Bhandari 317

EDITORIAL: Page

Standards of Medical Education in Indian Medical Colleges 319

GENERAL PRACTICE DIGEST 321

CURRENT MEDICAL LITERATURE 322

CURRENT TOPIC:

Suggestions for Wider Facilities for Medical Education and Medical Care in Our Country —R. Mahadevan 323

NOTES AND NEWS 326

REVIEWS 329

SUPPLEMENT:

1. I. M. A. Study Tour Russia-Europe, 1960 ... 331
2. XIII Gujarat, Saurashtra and Kutch Medical Conference, 1960, Ahmedabad 332
3. Branch Notes 336

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Index to Advertisers

	Page
Alembic Chemical Works Co. Ltd.	xii
Allen & Hunburys Limited.	xxvii
Antiseptic	xi
Bengal Chemical & Pharm. Works Ltd.	Front Cover
Bengal Immunity Co. Ltd.	2nd Cover
Boehringer-Knoll Private Ltd.	ix
Brahmachari Research Institute	xi
Chemo-Pharma Laboratories Ltd.	xx
Corn Products Co. (India) Private Ltd.	xiii
Crooks Laboratories Limited.	xxvi
Dey's Medical Stores Private Ltd.	xxv
Eastern Drug Co. Ltd.	iv
East India Pharmaceutical Works Ltd.	xxviii
Franco-Indian Pharmaceuticals Pvt. Ltd.	vii, xv, xxi
G. D. Pharmaceuticals Private Ltd.	xiv
Hindustan Lever Limited.	x
Hind Chemicals Limited.	xii
Hoechst Pharmaceuticals Private Ltd.	xxxi
Indian Health Institute & Labo. Ltd.	3rd. Cover
International Chemical & Biological Institute Private Ltd.	xxxvii
J. & A. Churchill Ltd.	xiv
J & J. DeChane	xiii
Johnson & Johnson of India Pvt. Ltd.	xxxiv, xxxv, xxxix
John Wyeth & Brother Ltd.	xliv
Khatau Valabhdas & Co.	xxii
Knox Company (Muller & Phippe (India) Pvt. Ltd.)	xix
Lederle Laboratories (India) Pvt. Ltd.	i
May & Baker (India) Private Ltd.	iii
Mysore Industrial & Testing Laboratory	xii
Navaratna Pharmaceutical Laboratories	3rd Cover
Neo-Pharma Private Ltd.	v, xvii
Nestle's Products (India) Ltd.	xvi
Oriental Pharmaceutical Industries Ltd.	xxvi
Phoenix Drug House Pvt. Ltd. (Fairfield Syndicate (Agency) Pvt. Ltd.)	xxiv
Pfizer Eastern Corporation (Dumex Private Ltd.)	xxix, xxxviii
Parke-Davis (India) Private Ltd.	xxxii
Postgraduate Medical Journal	xxxvii
Raptakos, Brett & Co. Private Ltd.	3rd Cover
Ranbaxy & Co. Private Ltd.	xx
Rallis India Ltd.	xxiii
Smith Sanistreet & Co. Ltd.	xiiii
Smith Kline & French (India) Ltd.	ii, viii
Sarabhai Merck Private Ltd.	vi
Sarabhai Chemicals	xi
Standard Laboratories Inc.	xiii
Stadmed Private Ltd.	xxiv
Suhrid Geigy Trading Private Ltd.	xxxiii
Sandoz Products Private Ltd.	xxxvi
Scientific Publication Concern	xii
Theraputic Pharmaceuticals	xviii
Unichem Laboratories	Back Cover
Universal Drug House Private Ltd.	xii
Voltas Limited.	xxx

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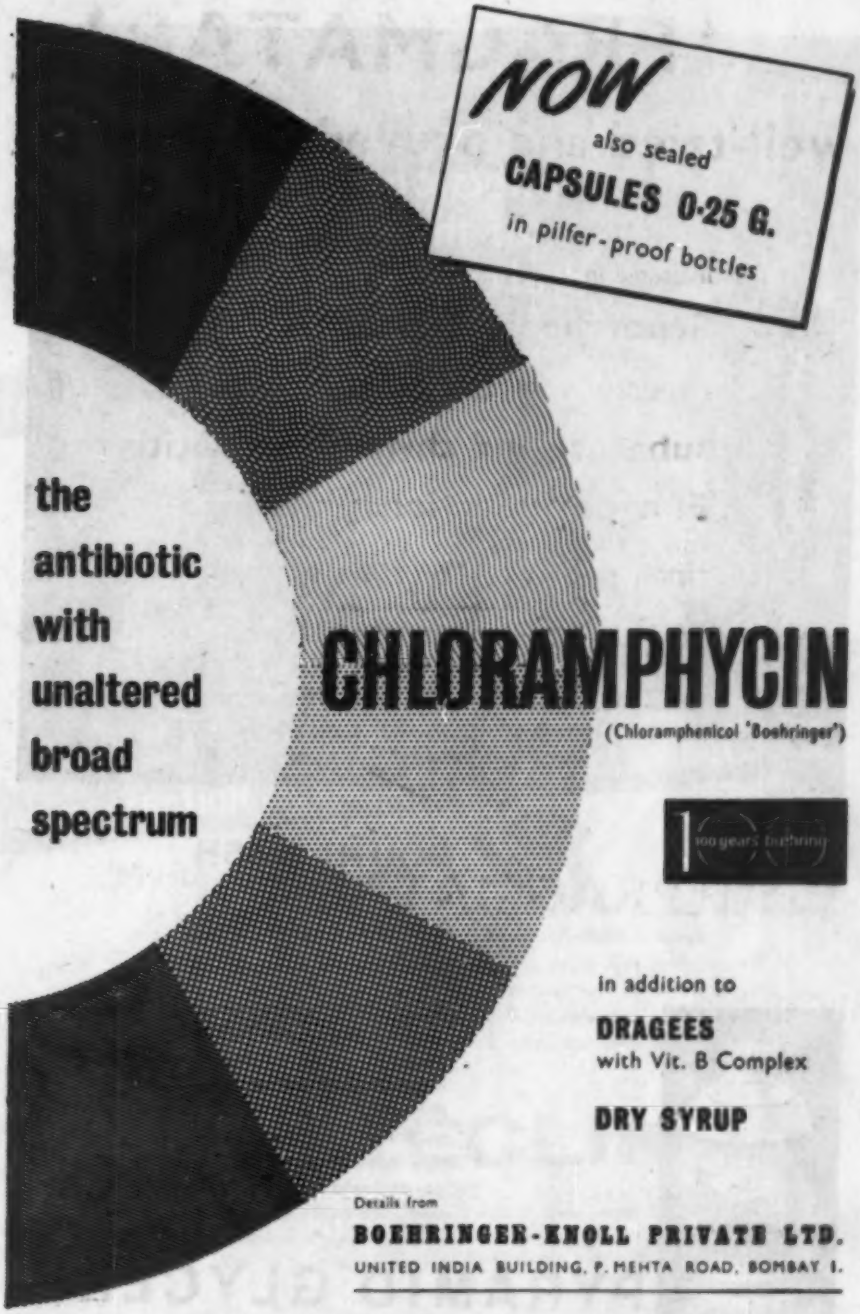

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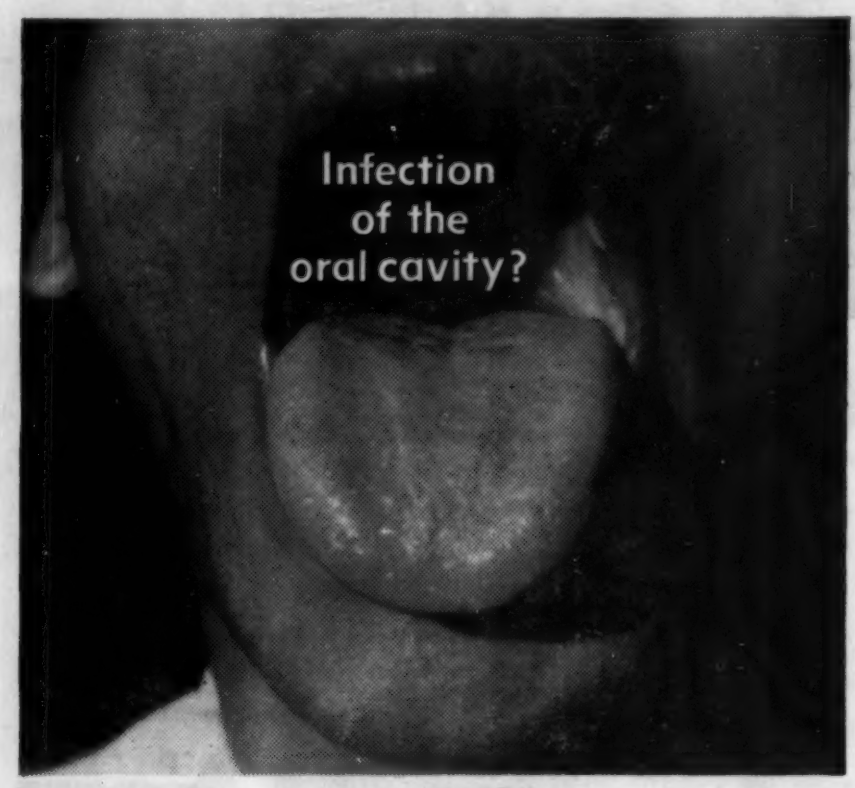

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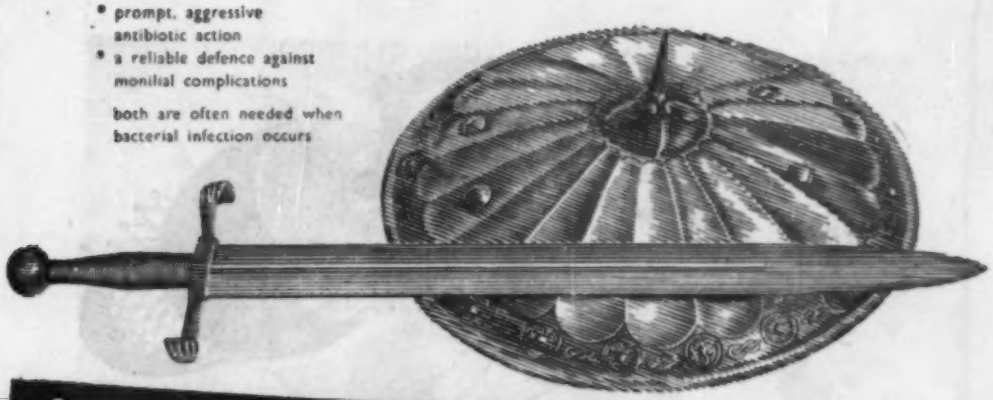

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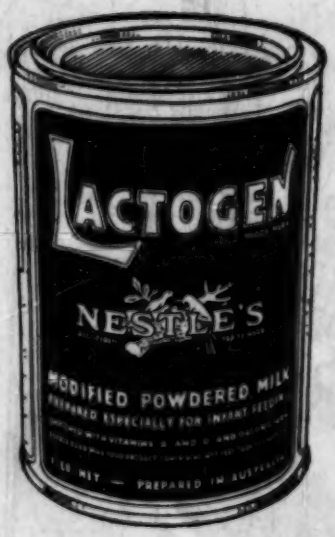

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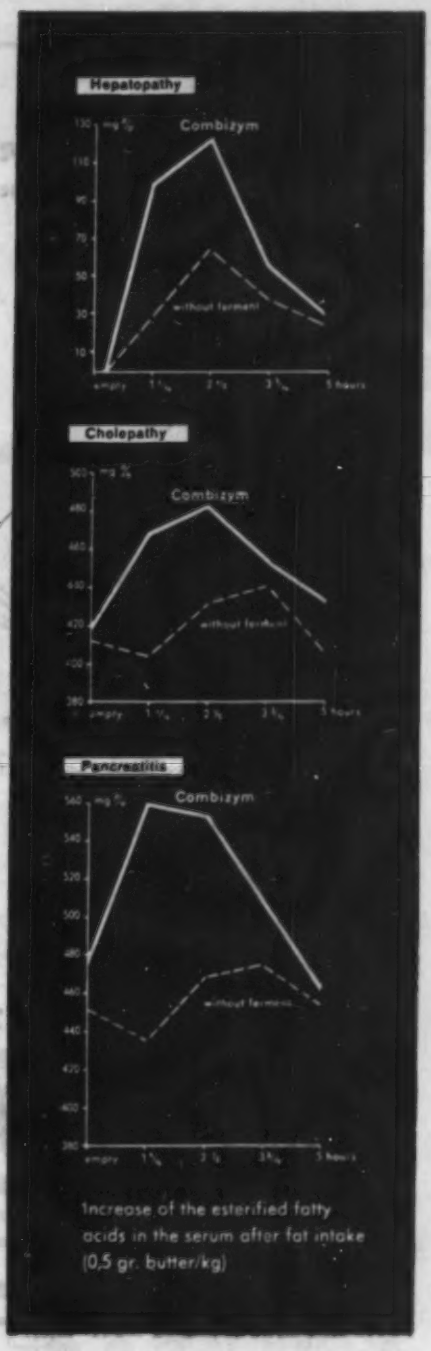

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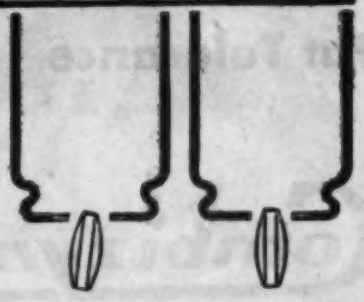

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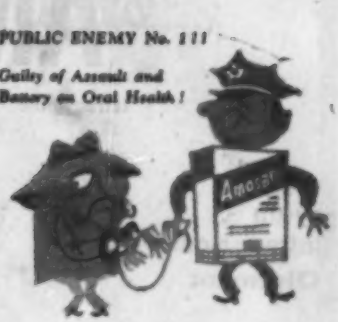

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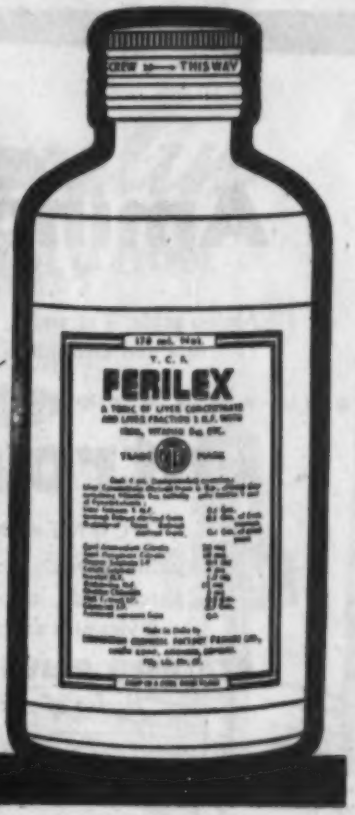

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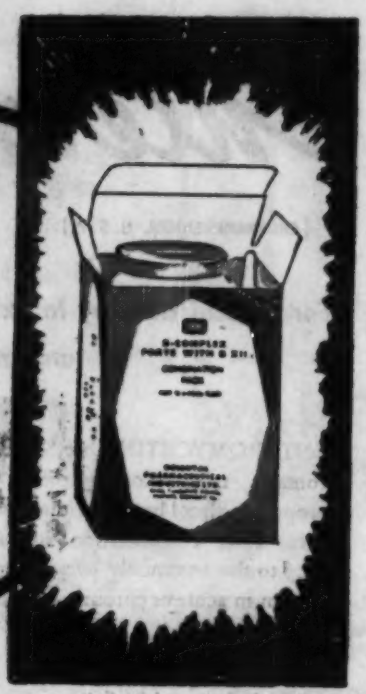

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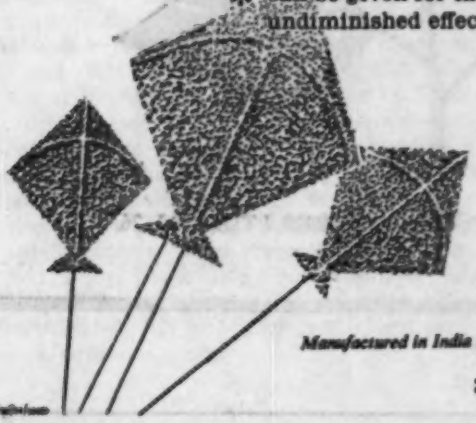

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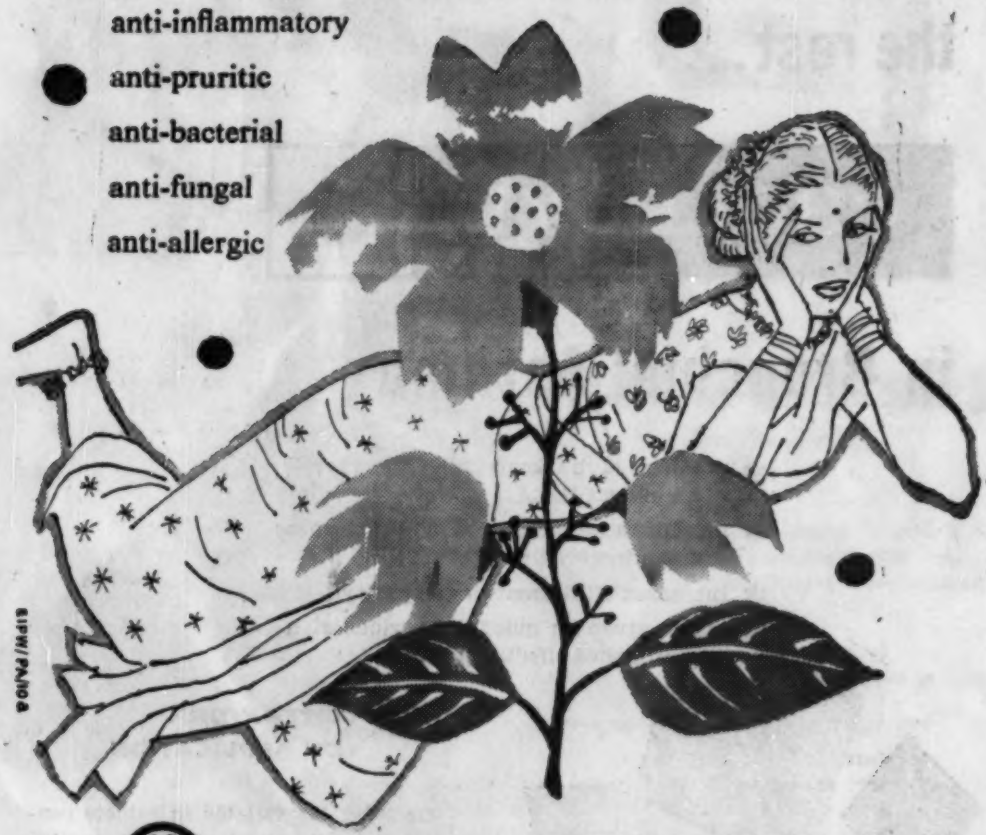

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ORIGINAL ARTICLES

HISTOPATHOLOGY OF THE LIVER IN THALASSAEMIA SYNDROME

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INTRODUCTION

Thalassaemia, either in the homozygous form or in combination with abnormal haemoglobin (mainly haemoglobin E), is fairly common in Eastern India. The haematological features of thalassaemia as seen in this country have been described in detail by Chatterjea *et al* (1956) and by Chatterjea (1959). The pathological changes in the spleen in a series of thirty cases of thalassaemia seen in Calcutta have recently been described by us (Mukherjee *et al*, 1959). The morbid changes in the liver in Cooley's anaemia were described by several workers, viz., Cooley *et al* (1927), Baty *et al* (1932) and Whipple and Bradford (1932) soon after the condition was recognised and by a few others subsequently. These may be summarised as follows: There is deposition of fine grain of haemosiderin in the liver parenchyma cells and large amount of this pigment is seen in Kupffer cells also. In addition to haemosiderin, Kupffer cells usually contain coarse granular refractile pigment which does not contain iron. The liver cells usually show fatty changes. Foci of extramedullary haemopoiesis may be present in the liver particularly in advanced cases.

The present communication deals with the histological changes in the liver as studied mainly in biopsy material in this condition. Most of the previous reports were based on autopsy material.

MATERIAL AND METHODS

We have studied specimens of liver from 18 cases of thalassaemia syndrome diagnosed by clinical features and detailed haematological investigation. Sixteen of the specimens were obtained during splenectomy, one obtained postmortem and another by needle biopsy. The paraffin sections, 5-7μ thick, prepared from formol-fixed tissue, were subjected to the following: (*a*) haematoxylin-eosin stain, (*b*) picro-Mallory stain for hyaline degeneration, (*c*) Gordon and Sweet's method of reticulin stain, (*d*) Perl's reaction for iron containing pigment and (*e*) periodic acid-Schiff (PAS) reaction.

OBSERVATIONS

The relevant clinical data are presented in Table 1.

All the eighteen cases were of Indian nationality; ten of them were males and the rest were

TABLE 1

Age group	6 months—6 years	7 years—12 years	13 years—26 years
Number	6	5	7
Sex	Male 2 Female 4	Male 2 Female 3	Male 6 Female 1
Haemoglobin level at first observation (Range)	2·03 — 5·8 g.	2·03 — 6 g.	2·3 — 9·5 g.
Percentage of foetal haemoglobin (Range) ...	22 — 40	8·8 — 50	18 — 50

females. Eleven cases were between 6 months and 15 years of age. Sixteen of these cases were suffering from Hb. E-thalassaemia and the two from homozygous thalassaemia. The liver was enlarged in all the cases (10 cm. below the costal margin).

HISTOLOGICAL FINDINGS :

The *capsule* was normal in all the cases except two in which it was regarded as slightly thickened.

The *hepatic parenchyma cells* showed normal appearance in thirteen specimens in the present series of eighteen cases. The hepatic cells of the surgical and needle biopsy specimens showed a foamy, finely reticulated appearance which is characteristically seen due to presence of glycogen in contrast to glycogen-poor cells which have denser cytoplasm (Popper and Schaffner, 1957). The depletion of cytoplasmic material was noted in the centrilobular cells in 3 cases. Hyaline degeneration was noted by the picro-Mallory stain in some of the cells of the periportal region of the liver in 4 cases only. Mild fatty changes were observed in the centrilobular cells in two cases ; in one case, however, both hyaline degeneration and fatty changes were present.

The coarse and fine granules of *yellowish brown pigment* were found in the hepatic cells of all the cases. This pigment gave positive reaction for trivalent iron by Perl's stain. The amount of pigment present has been graded as plenty (8 cases), moderate (7 cases) and scanty (3 cases). Predominantly periportal distribution of the pigment was a constant feature in all. The coarse granules of the pigment were usually seen in the hepatic cells in the periphery of the lobuble and finer granules were found in the midzonal and centrilobular cells. The total amount of haemosiderin pigment engulfed by the Kupffer cells was relatively less than in the hepatic cells. In five cases the pigment was completely absent from the Kupffer cells. Small amounts of haemosiderin granules were observed in the Kupffer cells in eleven cases ; in two specimens, however, moderate amount of pigment was noted (Fig. 1, *vide* Plate).

In addition to the haemosiderin there were reddish brown pigment granules mainly in the Kupffer cells and a few in some of the hepatic cells in sixteen cases. Moreover, a coarse yellowish brown pigment was found in the histiocytes of the portal spaces in five cases. This pigment gave diastase-fast positive reaction with the PAS method and did not show alcohol resistant *gamma* metachromasia with toluidine blue (Fig. 2, *vide* Plate). The Kupffer cells contained a few PAS-positive granules, probably lipofuscin, in most of the cases. Small areas of focal necrosis were observed in one case only. These areas also showed condensation of reticulin. *Glycogen* was found to be normally distributed in ten cases ; seven cases showed polarisation or streaming of glycogen due to uneven fixation. The post-mortem tissue showed no glycogen.

Though more or less normal cellularity of the portal tracts was observed in 11 cases, in 7 specimens the portal tract was hypercellular. The reticulin framework was normal in fourteen cases but some degree of condensation of reticulum was noted in four. The presence of a marked degree of haemopoiesis was observed in one case only, (Figs. 3, 4 and 5, *vide* Plate) but moderate degree of haemopoiesis was found in fifteen cases and two cases showed only a few normoblasts. The haemopoietic cells were found in the hepatic sinusoids. The foam cells so frequently observed in the spleen in thalassaemia (Mukherjee *et al*, 1959) were not found in any specimen. But a few mucopolysaccharide-containing histiocytes were detected in the portal tracts in five cases. The latter did not resemble the foam cells morphologically though their contents were somewhat similar.

There were collections of histiocytes in the form of a whorl in one case only (Case 7). None of the specimens showed any evidence of fibrosis or cirrhosis of the liver.

DISCUSSION

The histological findings in the present series of cases indicate that considerable pathological

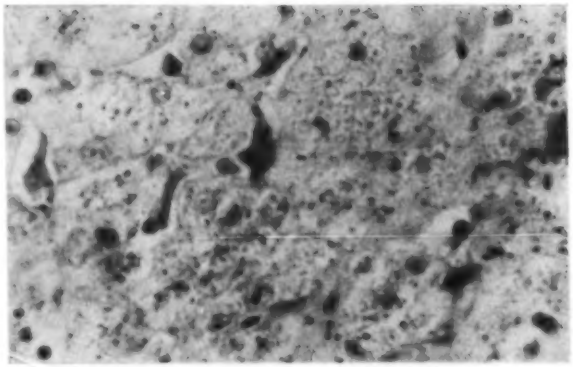

Fig. 1—Showing haemosiderin granules in hepatic cells and in Kupffer cells; one of the latter packed with pigment (high power)

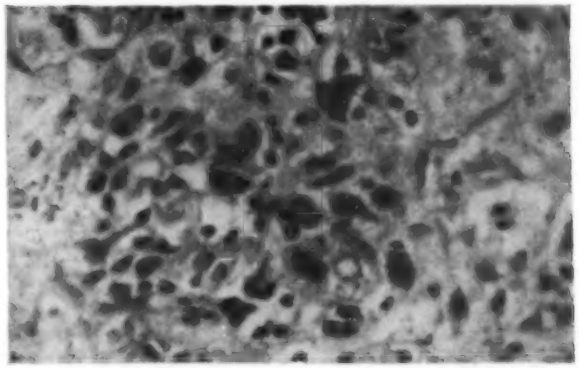

Fig. 2—Showing a large number of histiocytes in the portal tract containing diastase-fast PAS positive granules (high power)

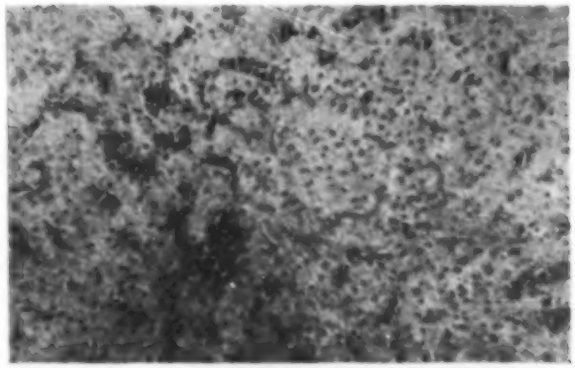

Fig. 3—Showing sinusoids of the liver packed with haemopoietic cells (low power)

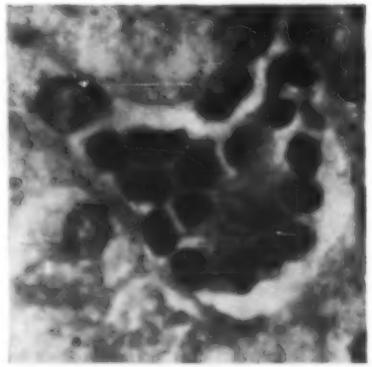

Fig. 4—A haemopoietic focus in the sinusoids of the liver showing erythroid and myeloid cells (high power)

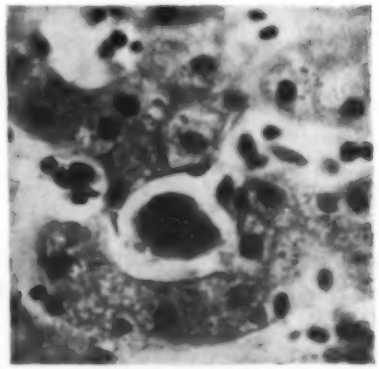

Fig. 5—Showing a megakaryocyte in the sinusoid of the liver (high power)

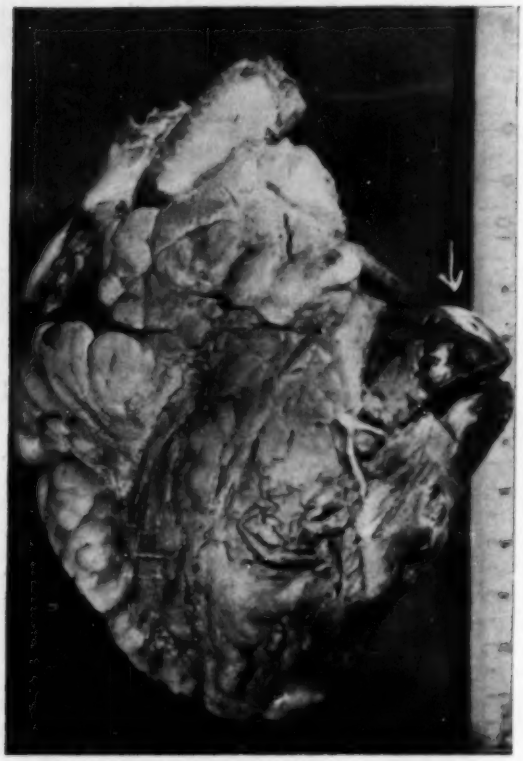

Fig. 1—Showing the anterior surface of the heart. The gumma is seen as a protuberance on the left border (shown by arrow)

Fig. 2—Showing the posterior aspect of the heart. Arrows point towards the cavity of the swelling which is lodged in the wall of the left ventricle

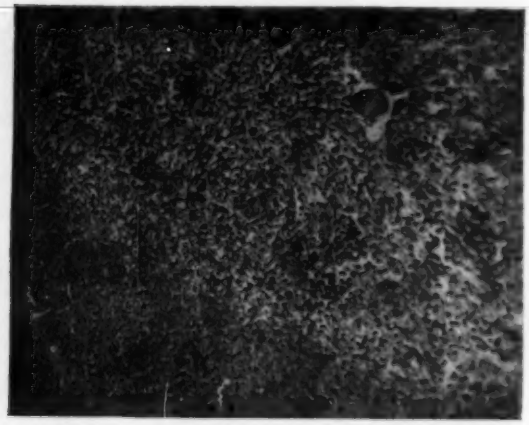

Fig. 3—Showing photomicrograph of the gumma in the myocardium. Note the area of necrosis bordered by a zone of granulation tissue which includes a few giant cells of the Langhans' type (H. & E. × 160)

Fig. 4—Photomicrograph showing fibrous character of the lesion and perivascular cuffing (H. & E. × 630)

RANGAM *et al—Gumma of the Heart (p. 317)*

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changes occur in the liver in thalassaemia. Some of the abnormalities noted are similar to those recorded by the early workers on the subject (*vide supra*).

Fatty metamorphosis of the liver parenchyma cells was held to be usual in thalassaemia (*vide supra*). But in our series of cases only the specimen obtained post mortem showed marked fatty changes ; those obtained by surgical or needle biopsy showed little or no change. It appears probable that extensive fatty changes recorded by the early workers were essentially secondary to the complications leading to fatal termination. Thalassaemia by itself even when associated with severe anaemia does not cause any marked degree of fatty metamorphosis. In this connection it may be mentioned that fatty changes are unusual in liver parenchyma cells in uncomplicated, non-fatal cases of kala-azar (Sen Gupta *et al*, 1956) while it is usual in post-mortem material (Napier, 1951).

'Alcoholic' hyaline degeneration, depletion of cytoplasmic material and presence of small foci of hepatocellular necrosis observed in a few cases are indicative of hepatic cell damage which could have nutritional or infective background.

Haemosiderin was detected in the parenchyma cells in all the cases and in Kupffer cells in thirteen cases. The pigment could be identified by its reaction for trivalent iron. Normally the iron is combined with protein in the hepatic cell cytoplasm and occurs in a soluble and nonparticulate form, ferritin. Haemosiderin granules are deposited when there is an excess of the iron containing pigment in the hepatic cell cytoplasm. In the present series of cases haemosiderin was found in larger amounts in the periportal parenchyma cells. This was obviously due to these cells having an easier access to haematogenous iron than the centrilobular cells because of the peculiarity of vascular architecture and circulation in the liver.

Whipple and Bradford (*loc. cit.*) were struck by haemosiderin deposit in the liver cells and on analogy with haemochromatosis, felt that thalassaemia was a disorder of iron pigment metabolism which could be associated with deficiency of some unknown substance. The current view is that thalassaemia is a disease due to a hereditary defect in the synthesis of adequate amount of adult haemoglobin (with no deficiency either of iron or of protoporphyrin) in the red cells which are thus abnormal and undergo haemolysis intravascularly and reticuloendothelially. The deposition of haemosiderin in the hepatic cells apparently occurs as a result of excess of haemolysis in this disease. Due to the intrinsic defect in haemoglobin synthesis, most of the available iron is not utilised and this is possibly an added factor responsible for iron accumulation in the organ.

According to Popper and Schaffner (*loc. cit.*), in haemolytic conditions there is greater accumulation of haemosiderin in the Kupffer cells than in the parenchyma cells. But in the present series of cases, haemosiderin was more in the parenchyma cells than in the Kupffer cells—a feature that is noted in haemochromatosis and certain types of nutritional siderosis (Popper and Schaffner, *loc. cit.*). Thalassaemia can be distinguished from idiopathic and secondary haemochromatosis by the absence of cirrhotic changes in the liver. It is, however, curious that though there is marked siderosis comparable to haemochromatosis in thalassaemia, cirrhotic changes are not caused by this abnormal amount of iron containing pigment. It appears that haemosiderin derived from intrinsic sources as in thalassaemia or in pernicious anaemia does not cause cirrhosis which is a feature both in idiopathic and secondary haemochromatosis in both of which conditions iron is derived from extrinsic sources. What chemical or enzymic factors determine the cirrhosis-producing potentialities of iron pigment are yet unknown.

As regards nutritional defect being a factor in the distribution of haemosiderin, it may be mentioned that cases of thalassaemia do not usually show hypoproteinaemia or any gross evidence of avitaminosis.

The other type of pigment granules, non-iron containing refractile and brownish in colour, was probably lipofuscin (or haemofuscin). This pigment is also called 'wear and tear' pigment and is found in old age, chronic malnutrition and debilitating diseases. It is also increased in vitamin E deficiency and is said to be connected with steroid metabolism (Popper and Schaffner, *loc. cit.*). Its presence in thalassaemia may indicate some alteration in the physiological status of hepatic cells.

In specimens of liver obtained by biopsy, the hepatic sinusoids are usually rather inconspicuous in normal cases. In the present series of cases of thalassaemia, hepatic sinusoids were readily seen as dilated channels. In all the cases the dilated sinusoids contained haemopoietic cells though the number of such cells varied considerably, marked to moderate degree of extramedullary haemopoiesis having been seen in 16 cases. These foci were part of similar haemopoietic tissue outside the bone marrow found in this disease.

The portal tracts were normal in most cases but in seven cases it showed round cell infiltration. The case showing two collections of epithelioid cells arranged in whorl in the liver had similar

foci in the spleen as well (Mukherjee *et al*, 1959). The exact significance of these foci and round cell infiltration in portal tracts is obscure. These could be due to inflammatory or nonspecific reaction to some associated toxic or chemical cause. There was no evidence of tuberculosis or sarcoidosis elsewhere in the body in this case and the patient has been in fairly good health since splenectomy three years ago.

Howell and Wyatt (1953) found pigmentary cirrhosis in one case of Cooley's anaemia studied post mortem. Ellis *et al* (1954) recorded cirrhotic changes in a small proportion of their cases (3 out of 13 cases) and noted slight increase of fibrous tissue in 7 cases of thalassaemia. Both the series of cases reported by Ellis *et al* (*loc. cit.*) and Howell and Wyatt (*loc. cit.*) had history of a very large number of blood transfusions (up to 225 in one case). It is very probable that these cases developed secondary haemochromatosis as the result of multiple transfusions. No case of the present series showed cirrhotic or fibrotic changes in the liver. It may be concluded, thalassaemia by itself does not usually cause cirrhosis of the liver.

Summary

The histological examination of specimens of liver from 18 cases of thalassaemia showed the following salient features. In the non-fatal cases, the hepatic parenchyma cells showed depletion of cytoplasmic material in three cases, hyaline degeneration in four, focal necrosis in one case and mild degree of fatty changes in three. A variable degree of haemosiderosis was found in the hepatic cells in all the cases. In 13 cases the Kupffer cells showed the presence of haemosiderin and in the remaining 5 cases the iron pigment was absent. Besides, haemosiderin, lipofuscin or haemofuscin was found in liver cells as well as in Kupffer cells in sixteen cases. In five cases, histiocytic cells containing granules of mucopolysaccharide in addition to haemosiderin were seen in the portal tracts. Marked to moderate haemopoiesis was observed in sixteen cases and slight haemopoiesis noted in two. Foci of epithelioid cells arranged in whorls were seen in one case.

The findings have been discussed.

Acknowledgment

We are thankful to Drs. K. K. Ghose, S. Banerjee and Anjali Mukherjee for their careful surgical management and help in follow-up studies of the cases. Grateful thanks are also due to Drs. R. N. Ray and Sushiela Swarup of the Haematology Department.

References

Baty, J. M., Blackfan, K. D. and Diamond, L. K.—*Am. J. Dis. Child.*, **43** : 667, 1932.

Chatterjea, J. B.—Haemoglobinopathy in India in *Abnormal Haemoglobins*—Edited by J. H. P. Jonxis and J. F. Delafresnaye, Blackwell Scientific Publications, Oxford, p. 322, 1959.

Chatterjea, J. B., Saha, A. K., Ray, R. N. and Ghose, S. K.—*Bull. Calcutta School Trop. Med.*, **4** : 103, 1956.

Cooley, T. B.—*Am. J. Dis. Child.*, **33** : 786, 1927.

Ellis, J. T., Schulman, I. and Smith, C. H.—*Am. J. Path.*, **30** : 287, 1954.

Howell, J. and Wyatt, J. P.—*Arch. Path.*, **55** : 423, 1953.

Mukherjee, A. M., Sen Gupta, P. C. and Chatterjea, J. B.—*J. Indian M. A.*, **33** : 451, 1959.

Napier, L. E.— British Encyclopaedia of Medical Practice, Vol. 7, 1951, Butterworth & Co. (Publishers) Ltd., London, p. 295.

Popper, H. and Schaffner, F.—Liver : Structure and Function, 1957, McGraw-Hill Book Co., New York.

Sen Gupta, P. C., Chakravarty, N. K., Ray, H. N. and Das Gupta, B.—*Ann. Trop. Med. & Parasit.*, **30** : 252, 1956.

Whipple, G. H. and Bradford, W. L.—*Am. J. Dis. Child.*, **44** : 336, 1932.

A STUDY OF 1,000 CASES OF SMALLPOX

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Assistant Medical Officer

Infectious Diseases Hospital, Madras

Introduction

It is more than 150 years that Edward Jenner gave to the world the most potent weapon against smallpox. The efficacy of vaccination as a protective measure against smallpox has been proved beyond doubt. Yet the disease could not yet be eradicated from several parts of the world. The weapon is there ; but its utilisation to the utmost advantage is beset with several practical difficulties. It requires good planning, the co-operation of several sections of the community and also the co-ordination of several limbs of the administrative machinery. If certain countries have been

successful in eradicating smallpox, it was not by means of mass vaccination but by keeping the infection off their shores. Infection may be imported from other countries accidentally through contacts of smallpox cases during the period of incubation (Tottenham epidemic of 1957 and Merseyside epidemic of 1958). In spite of severe precautions infections occur, due to quick air and sea travel connecting different countries.

Conditions in India are quite different. Infection is always present and the only way to eradicate the disease is by an intensive programme of vaccination. Several states in India are endemic for smallpox and this has been a perennial problem to solve. Already the Government's attention has been drawn to this problem and several states are launching eradication programmes.

Madras city is one of such endemic areas for smallpox. The Corporation of Madras maintains a permanent and separate hospital for isolation and treatment of infectious diseases. Under the Madras Public Health Act of 1939 and the City Municipal Act of 1919, notification of occurrence of smallpox is compulsory in the city and isolation is effected in the Hospital for Infectious Diseases. Barring a few cases that may escape detection, the admission of smallpox cases into the Infectious Diseases Hospital represents fairly accurately the general incidence of the disease in the City. In this paper, we have discussed some of the salient features about the incidence of smallpox, with special reference to the various epidemiological features and the relationship of vaccination status of individuals to the incidence.

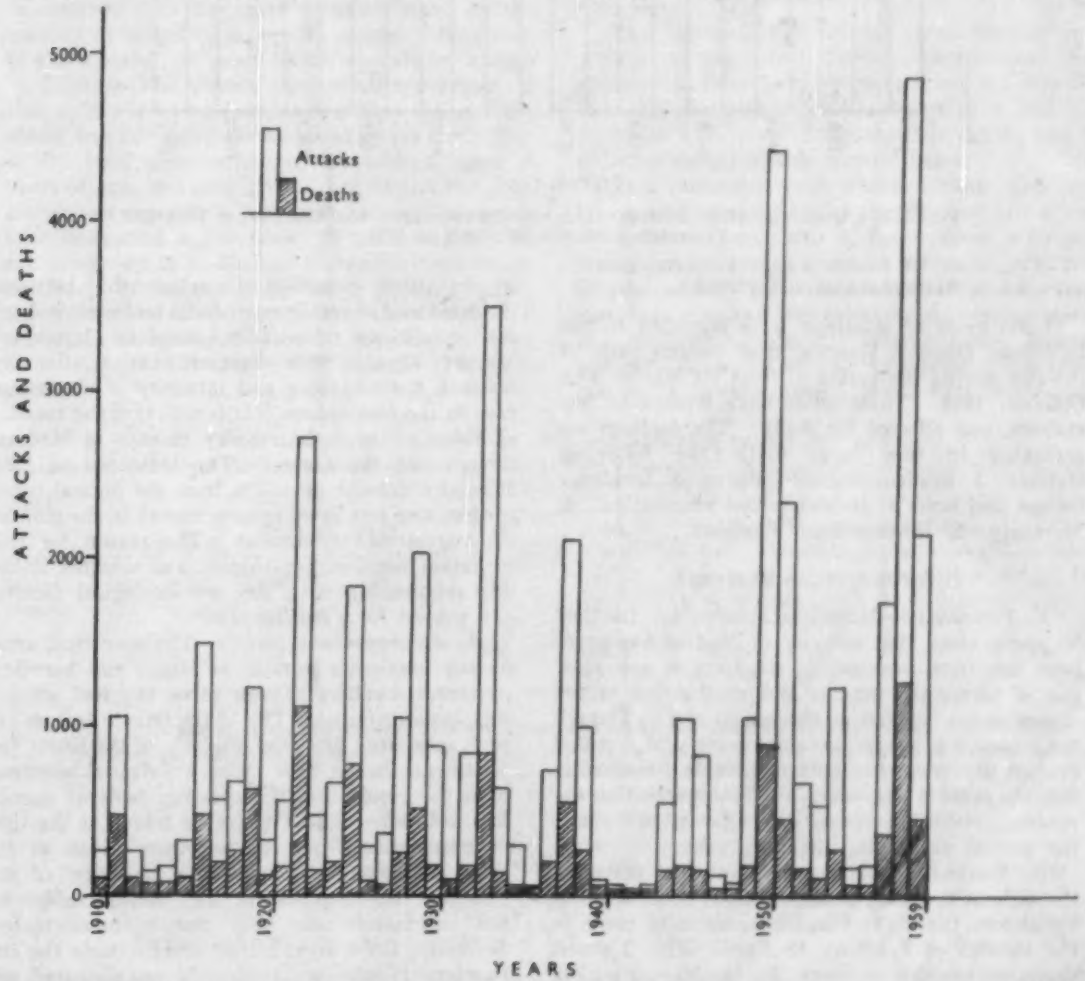

FIG. 1—SHOWING DISTRIBUTION OF ATTACKS AND DEATHS DUE TO SMALLPOX IN THE MADRAS CITY FROM 1910 TO 1959

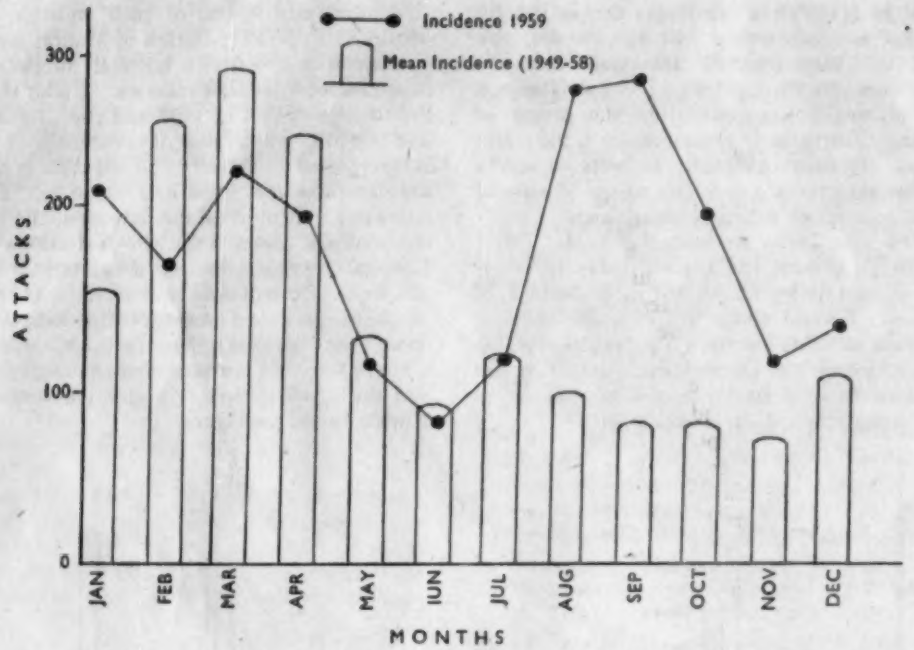

FIG. 2—SHOWING THE MEAN MONTHLY INCIDENCE OF SMALLPOX FOR THE PERIOD 1949-1958 COMPARED WITH THE INCIDENCE OF 1959

MATERIALS AND METHODS

1,000 cases of smallpox were admitted to the Infectious Diseases Hospital from various parts of the city during the period of from 1st May to 20th October, 1959. These cases were treated by the authors, and selected for study. The findings are presented in this paper under the following sections: 1. Epidemiological features. 2. Incidence by age and sex. 3. Incidence and vaccination. 4. Mortality. 5. Haemorrhagic smallpox.

EPIDEMIOLOGICAL FEATURES

1. *Periodicity*—Statistical records for the last 50 years, show that the city of Madras has never been free from infection of smallpox in any year. Fig. 1 shows the attacks and deaths due to the disease in the city during the last 50 years. Though the infection has been prevalent every year, yet it is evident that it reached epidemic levels periodically, roughly every 4 to 6 years. It is also seen that the epidemic conditions spread over a period of 3 years, the central year being the peak year.

2. *Seasonal prevalence*—Though prevalent throughout the year, smallpox shows some seasonal variations, the highest incidence seem to occur in the months of February to April. Fig. 2 shows the mean monthly incidence for the 10-year period, 1949 to 1958, compared with the incidence of 1959. Rogers (1945) described the relationship between the incidence of smallpox in India and meteorological conditions, especially absolute humidity. Murthy *et al* (1958) discussed the relationship between the incidence and intensity of ultraviolet rays in the atmosphere. It is true that the months of February to April are dry months in Madras, though not the hottest. The incidence of 1959 showed a definite deviation from the normal trend in that, the maximum cases occurred in the months of August and September. The reason for this deviation requires explanation and whether it has any relationship with any meteorological factors, is a subject for a further study.

3. *Environmental factors*—The municipal areas having maximum number of slums and homeless pavement dwellers happen to be the foci whence this disease started. The characteristic features of such areas are: first, the residents of the slums and pavements do not have proper residential addresses with the result that the children born of women in the locality cannot easily be traced at the time of vaccination from the addresses given at the lying-in hospitals. Hence the majority of the children are disposed of as 'non-traceable' by the vaccinators and they remain unvaccinated. Secondly, these areas attract from outside the city immigrants who are invariably unvaccinated and who come for employment and settle in slums and

on the pavement. Thirdly, both men and women of this class are workers who leave their homes early in the morning and return only late at night. Lastly, the size of majority of these families is large and they live in overcrowded single roomed huts. All these factors help in very rapid transmission of infection once it is implanted in the locality.

Incidence by Age and Sex

Smallpox is a disease that shows no respect for age, sex, race or community. It affects all ages and both sexes ; the poor and the rich are affected alike. The only factor that may influence its incidence, is the vaccination status. The distribution according to age and sex is described below :

One variety of smallpox, the "Haemorrhagic", has been excluded from the general analysis and dealt with separately. This variety has very little in common with the other varieties, either in the manner of distribution, or the course or prognosis of the disease. It is an entity separate by itself.

1. *Age*—The disease affected all age-groups in this series, the youngest was 13 days old and the oldest was 60 years. With about 28 per cent (274) of the total cases occurring in children below 6 years of age, and only 10 per cent (98) in the next higher age-group (6 to 10 years), the incidence rose with increasing age to about 29 per cent (285) in the age-group 21 to 30, and thereafter it gradually declined. If the age-group below 6 years is further subdivided it can be seen that there were only 2 cases in infants aged below 30 days and 54 cases in the group of 1 month to 6 months (Tables 1 and 2).

2. *Sex*—The disease was equally prevalent in both the sexes with 486 in each sex (Table 1). Though numerically the incidence is the same, yet the specific case incidence rate in females would be greater, since the proportion of females in the general population according to the 1951 census is less, roughly by 8 for every 100 males.

With reference to age and sex, there was greater incidence in females in the proportion of 4 : 3 in the age-group of 6 to 20 and this was compensated by greater incidence in males in the other age-groups.

Incidence and Vaccination

1. *General considerations*—For this study, the presence of a scar of successful vaccination was taken as the criterion for classifying the cases into two groups, the 'unvaccinated' and the 'vaccinated'.

The unvaccinated are (a) those persons who were never vaccinated, (b) those persons who were reported to have been vaccinated but did not present any scars of successful vaccination and also (c) those who were vaccinated only during the incubation period of the present attack.

The vaccinated were those persons who bore scars of successful vaccination whether primary or re-vaccination and also included those who presented evidence of a previous attack of smallpox. In the series under review (1,000 cases) there was none who had any evidence of previous attack of smallpox. Further, barring one isolated instance, there was no case who presented scars of successful re-vaccination. Since a re-vaccination,

Table 1—Showing Distribution of Cases according to Age and Sex

Sex	Age group (years)							Total
	0-5	6-10	11-20	21-30	31-40	41-50	51 & above	
Male	145	39	88	147	47	17	3	486
Female	129	59	114	138	28	10	8	486
Totals ...	274	98	202	285	75	27	11	972

Table 2—Showing Distribution of Cases according Age (below 6 Years) and Sex

Sex	Below 30 days	1 month to 6 months	7 months to 12 months	13 months to below 2 years	25 months to below 3 years	37 months to below 4 years	49 months to below 5 years	61 months to below 6 years	Total
Male	1	25	18	24	25	13	17	22	145
Female	1	29	20	23	19	13	11	13	129
Totals ...	2	54	38	47	44	26	28	35	274

which did not produce either a vaccinial or vaccinoid take, is not considered to be of much significance (Seal, 1959), for all practical purposes only the scars of primary vaccinations were taken into consideration.

In all, there were 430 cases among the unvaccinated as against 542 in the vaccinated. With reference to the number of scars of vaccination there were, amongst the vaccinated, 61 with one, 184 with two, 51 with three and 246 with four scars.

2. *Vaccination and age*—In the unvaccinated, the maximum incidence of 60 per cent (262) occurred in children aged 5 years and below and the incidence gradually declined with increasing age. Whereas, in the vaccinated, the incidence is the lowest in the extremes of life with 2·2 per cent (12) in the age-groups of 5 years and below and 1·6 per cent (3) in the age-group of 51 years and above and the highest about 46 per cent (248) in the age-group of 21 to 30. In infants and children below 2 there was no case in the vaccinated as against 141 in the unvaccinated. The incidence in the vaccinated is relatively less only up to the age of 10 years, and beyond that age it was more in the vaccinated than in the unvaccinated. Table 3 shows the distribution of cases according to age and sex with reference to vaccination status.

3. *Vaccination and sex*—The distribution by sex was not affected by vaccination at all. There was exactly equal number of cases in either sex, with 215 of each sex in the unvaccinated and 271 of each sex in the vaccinated. However, there was greater incidence in females in all age-groups except 0-5 years and 21-30 years in the unvaccinated whereas in the vaccinated, there was greater incidence in females up to 20 years beyond which the incidence was greater in males (Table 3).

4. *Vaccination and type of rash*—Cases of variola major were mainly of two clinical entities, viz., the haemorrhagic and the non-haemorrhagic. As stated already, the haemorrhagic variety was excluded from the general analysis and dealt with separately.

The non-haemorrhagic group was further divided into three clinical varieties depending upon the density and the evolution of the rash. The rash on the face was taken as the index to measure the density.

(a) The 'confluent' type—Cases where the rash on the face was so dense and coalescent that there was little healthy unaffected skin in between were classed as confluent. Some of the cases of this group might not have such a confluent rash on other parts of the body except the face.

(b) The 'discrete' type—This type was characterised by cases where the rash on the face was discrete leaving areas of skin unaffected in between ; but the rash evolved through all the stages of the macule, papule, vesicle, pustule and scab.

(c) The 'modified' type—This class is typified by cases where the rash was discrete, but the evolution was quickened and the rash might have scabbed off even without going through all the stages.

It is believed that the severity of the rash is inversely proportional to the immunity level in the individual against smallpox.

In this series (1,000 cases) only 972 belonged to the non-haemorrhagic group. Irrespective of vaccination status 38·8 per cent of the total cases were of the confluent type. With reference to the vaccination status 66·5 per cent (286) of the total unvaccinated cases were confluent, as against only 16·7 per cent (91) of the total vaccinated. The ratio between the discrete (including modified) to the confluent was 1 : 2 in the unvaccinated against 5 : 1 in the vaccinated.

TABLE 3—SHOWING DISTRIBUTION OF CASES ACCORDING TO AGE, SEX AND VACCINATION STATUS

Age group (years)	Unvaccinated			Vaccinated			Total cases		
	Males	Females	Total	Males	Females	Total	Males	Females	Total
0—5	140	122	262	5	7	12	145	129	274
6—10	29	33	62	10	26	36	39	59	98
11—20	22	30	52	66	84	150	88	114	202
21—30	20	17	37	127	121	248	147	138	285
31—40	3	7	10	44	21	65	47	28	75
41—50	1	3	4	16	7	23	17	10	27
51 & above ...	0	3	3	3	5	8	3	8	11
Totals ...	215	215	430	271	271	542	486	486	972

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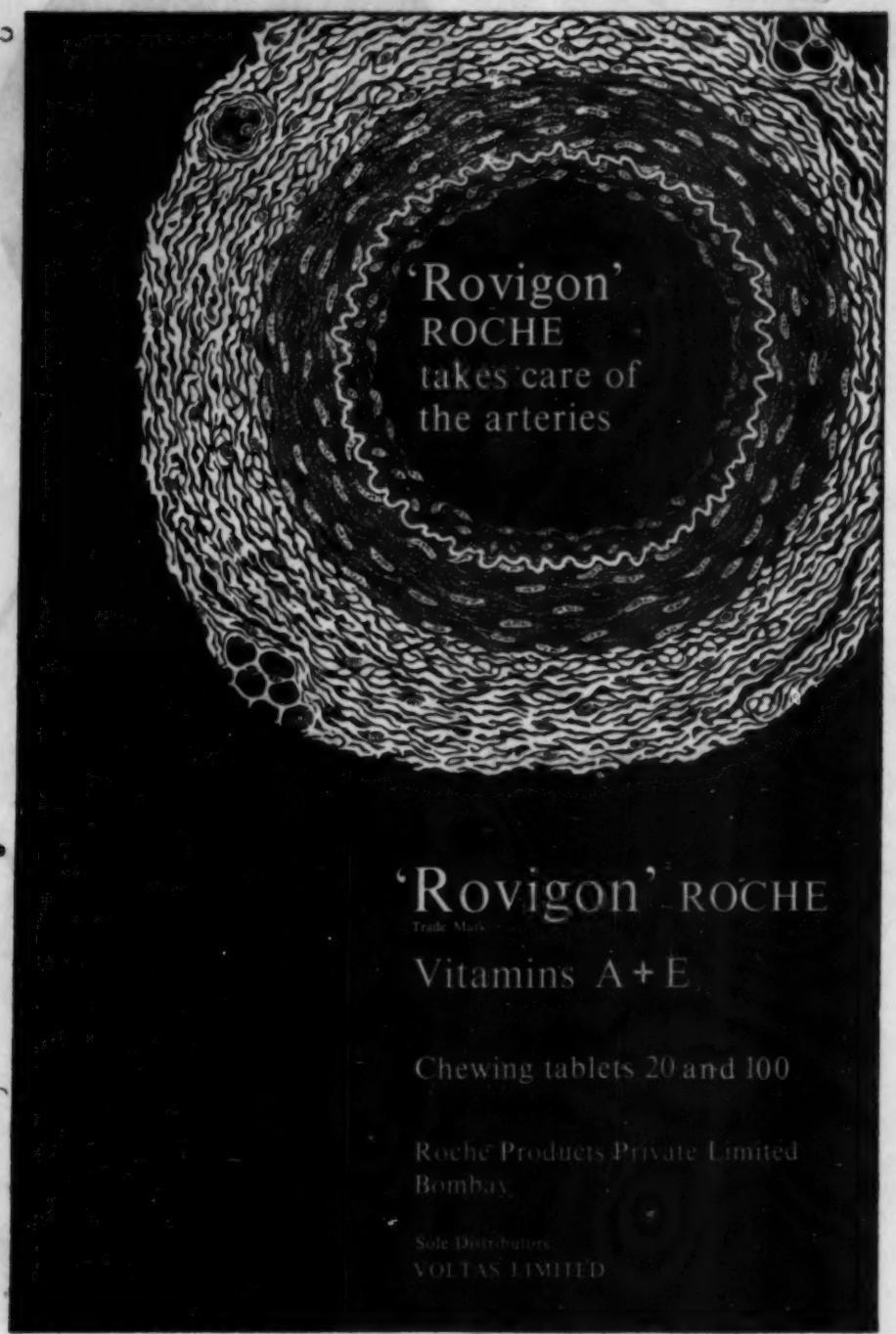
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TABLE 4—SHOWING DISTRIBUTION OF SMALLPOX IN THE UNVACCINATED AND VACCINATED IN DIFFERENT AGE GROUPS

Age group (years)	Unvaccinated				Vaccinated				Total			
	Modified	Discrete	Confluent	Total	Modified	Discrete	Confluent	Total	Modified	Discrete	Confluent	Total
0—5	—	93	169	262	1	8	3	12	1	101	172	274
6—10	—	19	43	62	1	32	3	36	1	51	46	98
11—20	—	16	36	52	26	107	17	150	26	123	53	202
21—30	1	12	24	37	34	175	39	248	35	187	63	285
31—40	—	1	9	10	7	41	17	65	7	42	26	75
41—50	—	1	3	4	2	13	8	23	2	14	11	27
51 & above	—	1	2	3	—	4	4	8	—	5	6	11
Totals	1	143	286	430	71	380	91	542	72	523	377	972

As regards the incidence of confluent cases with reference to age, in age-group of 10 years and below, nearly 65 per cent of the total were confluent in the unvaccinated as against 12·5 per cent in the vaccinated. The proportionate incidence of confluent attacks to the total increased with increasing age in the vaccinated, to nearly 45 per cent in persons of the age group of 51 years and above whereas in the unvaccinated, it was least with 54 per cent in the age group of 21 to 30 and varied from 60 to 70 per cent in other age-groups.

As regards sex, there were more confluent attacks in females in the vaccinated. This increased prevalence was mostly confined to the age-group 11 to 30 where there were 37 females against 19 males with confluent attacks. This increased incidence of confluent attacks among females was compensated by a greater number of modified cases in males. In the unvaccinated such wide disparity between the sexes was not found. Table 4 shows the distribution of cases according to clinical types with reference to age and the vaccination status.

5. *Vaccination scars and smallpox incidence*—For all practical purposes the scars of primary vaccination were taken into consideration, since none except one, presented any scars of re-vaccination.

Unless a child was debilitated or under-aged it is the practice in the city to make four insertions for all primary vaccinations, two in each arm. The Rotary Lancet method, when applied with the correct technique, leaves a standard-sized scar. It can safely be presumed that persons with 4 primary vaccination scars will outnumber several times the persons with less scars in the general population. In a study of a sample population in Madras city in 1944 it was found that the 4-scar persons in the general population were several times more than those with lesser number of scars. The incidence of cases with reference to the number of scars in the present series was therefore not

TABLE 5—SHOWING AGE DISTRIBUTION OF SMALLPOX CASES WITH REFERENCE TO THE TYPE OF RASH AND NUMBER OF VACCINATION SCARS

Age group (years)	1 scar				2 scars				3 scars				4 scars				Total			
	M	D	C	T	M	D	C	T	M	D	C	T	M	D	C	T	M	D	C	T
0—5 ...	—	2	1	3	1	4	1	6	—	1	1	2	—	1	—	1	1	8	3	12
6—10 ...	1	7	1	9	—	12	1	13	—	2	—	2	—	11	1	12	1	32	3	36
11—20 ...	4	12	—	16	7	26	7	40	4	12	—	16	11	57	10	78	26	107	17	150
21—30 ...	2	18	2	22	15	60	18	93	2	18	3	23	15	79	16	110	34	175	39	248
31—40 ...	—	3	—	3	4	10	13	27	1	2	—	3	2	26	4	32	7	41	17	65
41—50 ...	1	3	3	7	—	1	2	3	—	3	—	3	1	6	3	10	2	13	8	23
51 & above ...	—	1	—	1	—	—	2	2	—	1	1	2	0	2	1	3	—	4	4	8
Totals ...	8	46	7	61	27	113	44	184	7	39	5	51	29	182	35	246	71	380	91	543

M=Modified; D=Discrete; C=Confluent; T=Total.

comparable unless we had the data of the distribution of scars in the general population. However, the incidence with reference to scars was 61 cases with 1, 184 with 2, 51 with 3 and 246 with 4 scars.

The proportionate incidence of the confluent attacks with reference to the number of scars was: 11·5 per cent with 1, 23·9 per cent with 2, 10 per cent with 3 and 14·2 per cent with 4 scars. With reference to age, amongst cases of 10 years and below age-group only 7·7 per cent of the 4-scar group were confluent as against 7·5 per cent in the 3-scar, 10·5 per cent in the 2-scar and 16·6 per cent with the 1-scar group. But the difference between 1- and 2-scar grups and 3- and 4-scar groups was more marked, the proportionate incidence of confluent cases was 20·8 per cent in the 1- and 2-scar groups, as against 13·4 per cent in 3- and 4-scar groups. Table 5 shows the distribution of cases according to age with reference to number of vaccination scars.

Mortality

1. *General considerations*—Deaths from smallpox were mostly due to septicaemia produced by secondary invading organisms and consequent complications. But in unvaccinated children, it was not uncommon to find deaths occurring without much secondary infection; this is perhaps due to the virus toxaemia. Out of 970 cases there were 171 deaths with a case fatality rate (C.F.R.) of 18·7 per cent. The most important factor that influenced the prognosis was vaccination.

2. *Vaccination and mortality*—Irrespective of the age groups, there were 161 deaths out of 430 unvaccinated cases, with a C.F.R. (case fatality rate) of 37·4 per cent, as against 10 deaths out of 542 vaccinated cases, with C.F.R. of 1·8 per cent.

3. *Vaccination, age and mortality*—There was no death in the vaccinated in the age group of 10 years and below. Whereas in the same age group, there were 139 deaths, with C.F.R. of 42·9 per cent in the unvaccinated. The C.F.R. was the least (19 per cent) in the age group of 21 to 30 in the unvaccinated, whereas it was the least (1·3 per cent) in the age group of 11 to 20 in the vaccinated. All the fatalities in the vaccinated occurred in age-groups of 11 to 40, whereas in the unvaccinated the deaths were maximum in the extremes of life and minimum in the age-group of 21 to 30. Fig. 3 shows distribution of cases and deaths according to age with reference to vaccination status.

4. *Vaccination, sex and mortality*—There was greater mortality in males than in females in the unvaccinated with 85 and 76 deaths respectively, whereas in the vaccinated it was just the reverse, the figures being 3 and 7 respectively in males and females. Table 6 shows the number of cases, deaths and C.F.R. with reference to age, sex and the vaccination status.

5. *Vaccination, type of rash and mortality*—The C.F.R. for the discrete and the confluent varieties in the unvaccinated were 9 per cent and 51·7 per cent respectively as against 0·26 per cent and 9·9 per cent in the vaccinated. In the age-group of 10 years and below, there was no death in the vaccinated whereas the C.F.R. for the confluent type was 60 per cent in the unvaccinated. With reference to sex the C.F.R. was higher for the confluent in females in the vaccinated, the figures being 5·1 per cent and 13·4 per cent respectively for males and females as against 54·5 per cent and 48·9 per cent respectively in the

Table 6—Showing Distribution and Number of Cases, Deaths and C.F.R. with Reference to Age, Sex and Vaccination Status

Age group (years)	Unvaccinated									Vaccinated									Total		
	Males			Females			Total			Males			Females			Total					
	C No.	D No.	CFR %	C No.	D No.	CFR %	C No.	D No.	CFR %	C No.	D No.	CFR %	C No.	D No.	CFR %	C No.	D No.	CFR %	C No.	D No.	CFR %
0—5 ...	140	63	45	122	54	44·2	262	117	44·6	5	—	—	7	—	—	12	—	—	274	117	42·7
6—10 ...	29	14	44·4	33	8	24·2	62	22	35	10	—	—	26	—	—	36	—	—	98	22	22·4
11—20 ...	22	2	9·0	30	9	30·0	52	11	21	66	—	—	84	2	2·3	150	2	1·3	202	13	6·4
21—30 ...	20	6	30	17	1	6	37	7	19	127	2	1·5	121	3	2·4	248	5	2·0	285	12	4·2
31—40 ...	3	—	—	7	2	28	10	2	20	44	1	2·2	21	2	9·5	65	3	4·6	75	5	6·6
41—50 ...	1	—	—	3	1	33·3	4	1	25	16	—	—	7	—	—	23	—	—	27	1	3·7
50 and above	—	—	—	3	1	33·3	3	1	33·3	3	—	—	5	—	—	8	—	—	11	1	9·1
Totals ...	215	85	39·5	215	76	35·5	430	161	37·4	271	3	1·1	271	7	2·5	542	10	1·8	972	171	18·7

C=Cases; D=Deaths; CFR=Case fatality rate.

unvaccinated. Table 7 shows the number of cases, deaths and C.F.R. with reference to vaccination status and the type of rash.

6. *Vaccination scars and mortality*—The C.F.R. of different scar groups was nil in 1-, 3·7 per cent in 2-, 2 per cent in 3- and 0·8 per cent in the 4-scar groups. Similarly, the C.F.R. for confluent attacks in the different scar groups was nil in 1-, 16 per cent in 2-, nil in 3- and 5·6 per cent in 4-scar groups. Table 8 shows the number of cases, deaths and C.F.R. with reference to type of rash and the number of vaccination scars.

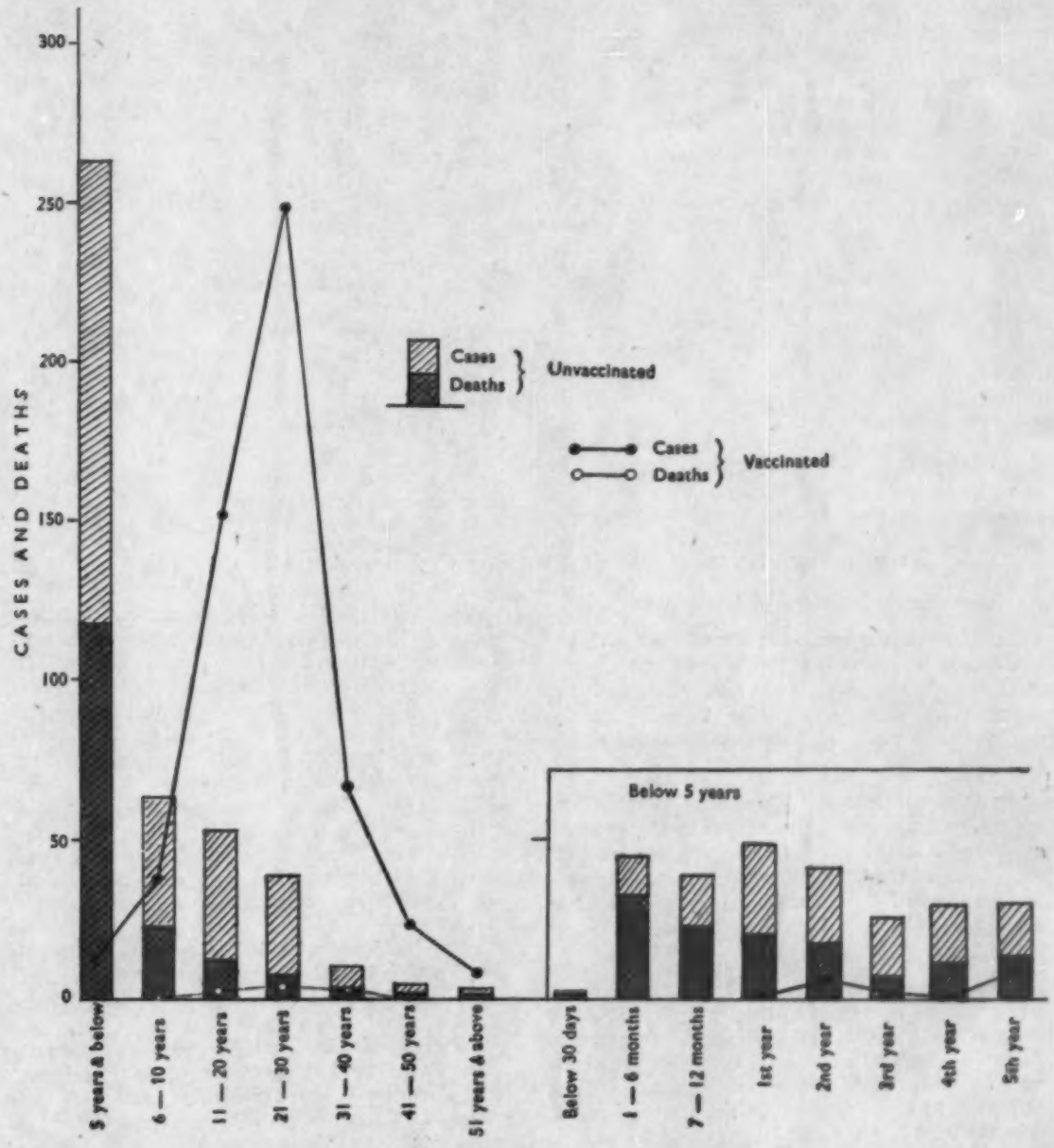

FIG. 3—SHOWING DISTRIBUTION OF CASES (ATTACKS AND DEATHS) IN DIFFERENT AGE GROUPS AND VACCINATION STATUS. INSET SHOWS CORRESPONDING FIGURES IN INFANTS AND CHILDREN (UP TO 5 YEARS).

TABLE 7—SHOWING NUMBER OF CASES, DEATHS AND CFR WITH REFERENCE TO TYPE OF RASH AND VACCINATION STATUS

Type of rash	Unvaccinated			Vaccinated			Total		
	C No.	D No.	CFR %	C No.	D No.	CFR %	C No.	D No.	CFR %
Modified ...	1	—	—	71	—	—	72	—	—
Discrete ...	143	13	9·0	380	1	0·26	523	14	2·6
Confluent ...	286	148	51·7	91	9	9·9	377	157	41·6
Totals ...	430	161	37·4	542	10	1·8	972	171	18·8

C=Cases; D=Deaths; CFR=Case fatality rate.

TABLE 8—SHOWING NUMBER OF CASES, DEATHS AND CFR AMONG THE VACCINATED WITH REFERENCE TO TYPE OF RASH AND NUMBER OF VACCINATION SCARS

Type of rash	1 scar			2 scars			3 scars			4 scars			Total		
	C No.	D No.	CFR %	C No.	D No.	CFR %	C No.	D No.	CFR %	C No.	D No.	CFR %	C No.	D No.	CFR %
Modified ...	8	—	—	27	—	—	7	—	—	29	—	—	71	—	—
Discrete ...	46	—	—	113	—	—	39	1	2·5	182	—	—	380	1	2·256
Confluent ...	7	—	—	44	7	16	5	—	—	35	2	5·6	91	9	9·9
Totals ...	61	—	—	184	7	3·7	51	1	2·0	246	2	0·8	532	10	1·8

C=Cases; D=Deaths; CFR=Case fatality rate.

HAEMORRHAGIC SMALLPOX

Haemorrhagic cases are of two types:

(a) Variola purpurica or true haemorrhagic smallpox or blackpox is a highly toxic variety with extensive haemorrhages into the skin and the mucous membranes and ending in death in the majority of cases even before the appearance of the focal rash.

In this series out of 1,000 cases 13 were of this variety. Of the latter, 8 occurred in the unvaccinated and 5 in the vaccinated groups (compare the proportion in the confluent type, 3 : 1). The case incidence was 1·8 per cent in the unvaccinated as against 0·9 per cent in the vaccinated.

With reference to age there was no case under 10 years both in the vaccinated and the unvaccinated. 6 out of 8 cases in the unvaccinated and 4 out of 5 in the vaccinated occurred in age-group 21 to 50 which appears to be the most vulnerable age for this fatal variety of smallpox. With reference to sex, 7 out of 13 cases were females, 4 in the unvaccinated and 3 in the vaccinated. As regards the incidence with reference to the number of vaccination scars, 3 out of the 5 cases in the vaccinated was in the 4-scar group. All cases of this variety ended fatally.

(b) Variola pustulosa haemorrhagica is another variety of haemorrhagic smallpox where haemorrhages occur rather late in the course of the disease after the focal eruption has reached the stage of vesicle. There were 15 cases of this variety, of which 10 were in the unvaccinated with an incidence rate of 2·3 per cent as against 5 in the vaccinated with the incidence rate of 0·9 per cent. The majority of these cases also (11 out of 15) occurred only in adults, though there were a few within 10 years in the unvaccinated. In the vaccinated, there was none below 10 years of age and 3 out of the 5 occurred only in the age-group of 21 to 30.

The incidence of this variety was greater in females than in males, with 3 out of 5 in the vaccinated and 6 out of 10 in the unvaccinated being females.

The case fatality rate was 90 per cent in the unvaccinated and 60 per cent in the vaccinated. The death rate was greater in females than in males, the figures being 89 per cent and 67 per cent respectively. Table 9 shows the cases, deaths of haemorrhagic smallpox with reference to age, sex and vaccination status.

TABLE 9—SHOWING THE NUMBER OF CASES OF HAEMORRHAGIC SMALLPOX AND DEATHS WITH REFERENCE TO AGE, SEX AND VACCINATION STATUS

Age group (years)	Sex	Unvaccinated						Vaccinated						Total						Total	
		V.P.		V.P.H.		Total		V.P.		V.P.H.		Total		V.P.		V.P.H.		Total		M	F
		C	D	C	D	C	D	C	D	C	D	C	D	C	D	C	D	C	D		
0—5 ...	M	—	—	1	1	1	1	—	—	—	—	—	—	—	—	1	1	1	1	3	3
	F	—	—	2	2	2	2	—	—	—	—	—	—	—	—	2	2	2	2		
6—10 ...	M	1	1	—	—	1	1	—	—	—	—	—	—	1	1	—	—	1	1	2	2
	F	—	—	1	1	1	1	—	—	—	—	—	—	—	—	1	1	1	1		
11—20 ...	M	1	1	1	1	2	2	—	—	—	—	—	—	1	1	1	1	2	2	5	5
	F	—	—	1	1	1	1	1	1	1	1	2	2	1	1	2	2	3	3		
21—30 ...	M	2	2	1	—	3	2	2	2	1	—	3	2	4	4	2	—	6	4	13	10
	F	3	3	1	1	4	4	1	1	2	1	3	2	4	4	3	2	7	6		
31—40 ...	M	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	3	3
	F	1	1	1	1	2	2	1	1	—	—	1	1	2	2	1	1	3	3		
41—50 ...	M	—	—	1	1	1	1	—	—	—	—	—	—	—	—	1	1	1	1	1	1
	F	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—		
51 and above	M	—	—	—	—	—	—	—	—	1	1	1	1	—	—	1	1	1	1	1	1
	F	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—		
Totals ..	M	4	4	4	3	8	7	2	2	2	1	4	3	6	6	6	4	12	10	28	25
	F	4	4	6	6	10	10	3	3	3	2	6	5	7	7	9	8	16	15		
G. Total ...		8	8	10	9	18	17	5	5	5	3	10	8	13	13	15	12	28	25		

V.P. = Variola purpurica; V.P.H. = Variola pustulosa haemorrhagica; C = Cases; D = Deaths; M = Males; F = Females.

DISCUSSION

The records of the incidence of smallpox during the last 50 years show that Madras city has become almost an endemic area for the disease, with periodic epidemics occurring roughly once in 4 to 6 years.

Though prevalent throughout the year the incidence was found to be maximum during February to April and minimum during June to November with a small rise in between during July and August. But, the year 1959 showed a deviation from the normal trend when the peak was reached in August and September. The relationship of meteorological conditions with seasonal variations in the incidence of smallpox was suggested. Whether the deviation of 1959 has any bearing on the meteorological conditions needs further study.

Cases of smallpox admitted to the Infectious Diseases Hospital, Madras from various parts of the city between May 1st to October 20th, 1959, numbering 1,000 were studied and the findings presented in this paper. The study was undertaken about the incidence and distribution of smallpox with reference to age, sex, type of rash and vaccination status. The following are the salient features of the study:

Of the 1,000 cases studied, 28 belonged to the haemorrhagic type, which were excluded from the general analysis and dealt with as a separate entity, because they were almost in all respects different from the non-haemorrhagic variety. The remaining 972 were analysed.

For the purposes of this paper, the vaccinated showed the scars of vaccination. In the unvaccinated scars were not visible. The last group included cases who were vaccinated for the first time during the incubation period of the attack.

In general, 55·7 per cent (542) of the total were vaccinated. Thus the incidence was a little

higher in the vaccinated than in the unvaccinated. This paradoxical finding, is due to the fact that in the general population the vaccinated persons are far larger in numbers than the unvaccinated. Hence the specific case incidence rate for the vaccinated would be less although numerically it may appear higher. But, if the incidence in children of 0-5 years age-group is compared, it is found to be significantly less in the vaccinated, which is not even one-twentieth of that in the unvaccinated. Even in the next higher age-group (6 to 10) the incidence in the vaccinated is comparatively less but the same thing cannot be said when the child is over 10 years old.

Secondly, the proportionate incidence of confluent attacks, is nearly 4 times higher in the unvaccinated than in the vaccinated. The incidence of confluent attacks was 65 per cent in the unvaccinated as against 12·5 per cent in the vaccinated in children below the age of ten.

Thirdly, if the case fatality is taken into consideration, there is again significant reduction amongst the vaccinated, the case fatality rate being 1·8 per cent as against 37·4 per cent in the unvaccinated. Below 10 years of age, there was no death at all in the vaccinated as against the 42·9 per cent case fatality rate of in the unvaccinated.

All these clearly show that vaccination does not only reduce the incidence of smallpox but also the severity of the attack and it almost completely protects the subject from death from smallpox. Further, vaccination done in infancy protects an individual to a very great extent, even without revaccination, from smallpox up to the age of 10 years.

As regards the number of vaccination scars there appears to be a significant difference between cases of 1 and 2 scars and those of 3 and 4 scars. The proportionate incidence of confluent attacks in these groups were 20.8 per cent and 13.8 per cent respectively. Similarly the case fatality rate for these groups were 3·5 per cent and 1 per cent. From all aspects therefore 4 vaccination insertions appear to confer the greatest protection compared to a lesser number of insertions.

1·3 per cent of the total of 1,000 cases belonged to that variety of haemorrhagic smallpox known as variola purpurica. Of these, 61 per cent were unvaccinated. 1·8 per cent of the total unvaccinated and 0·9 per cent of the total vaccinated belonged to this fatal variety. Under the age of 10 years, there was no case of this variety. 60 per cent of the total cases of this variety in the vaccinated were amongst the 4-scar group. The fact that there was no case of this variety in children under 10 years even amongst the unvaccinated and there were more cases in the 4-scar group even amongst the vaccinated suggested that it was not the want of immunity alone that was responsible for the incidence of this variety of smallpox, but there might be some other factors peculiar to the age-group of 21 to 40 which appeared to be the most vulnerable age-group for this type of attack. All these cases were 100 per cent fatal.

The other variety, variola pustulosa haemorrhagica, was a little more prevalent than the first variety. The incidence was 2·3 per cent in the unvaccinated and 0·5 per cent in the vaccinated. Though the majority of these cases (11 out of 15) occurred in adults yet it was not completely absent in children. The incidence was higher in females than in males in the proportion of 3 : 2. Even against this variety, vaccination does not seem to confer much immunity since as in the case of variola purpurica the incidence of this variety compared to the confluent was far less in unvaccinated children.

Apart from various aspects of incidence discussed one important conclusion of great significance was that the immunity which is supposed to be transmitted from the mother to the offspring through the placenta and which is supposed to last for a period of 6 months from birth is negligible and cannot be relied upon. In this series, nearly 13 per cent of the total unvaccinated occurred in the age-group 1 month to 6 months showing thereby that this congenital immunity may not last more than a month. Further, the impression that infants under the age of 6 months will not have the mechanism to prepare antibodies when active immunisation is done also appears to be wrong. In one of the maternity homes run by the Madras Corporation, the senior author is conducting a pilot investigation where about 700 newborn babies were vaccinated on the 3rd day after birth. From a preliminary check-up nearly 60 per cent of the babies were found to have developed primary take. This shows that a very negligible amount of immunity was transmitted through the placenta and also proves that even a newborn baby has the mechanism for the preparation of antibodies. This is confirmed by Seal *et al* (1959) who showed that vaccination could be done with a high degree of success if it is done under the age of one month. Similarly, 52 per cent of the vaccinations done on the 5th day after birth at primary centre hospitals in West Bengal were reported to be successful (Das Gupta, 1959).

Summary and Conclusion

A study of 1,000 cases of smallpox treated by the authors in the Infectious Diseases Hospital, Madras, is presented.

Judging by the incidence, severity of the rash and the case fatality this study revealed that vaccination in infancy afforded the greatest protection up to the age of 5 years against all the three, and beyond 5 years it afforded protection against the severity of attack and death. Amongst the vaccinated, from all respects the 4-scar group fared better than those with lesser number of scars.

Vaccination did not appear to offer much protection against the haemorrhagic varieties. It appears that there might be some other factors than the want of immunity alone, responsible for the occurrence of this variety. This requires further investigation.

The so-called placental immunity does not appear to last more than a month after birth, and hence primary vaccination should be done as early in life as possible—at about the age of 1 month. The immunity conferred by 4 successful insertions in infancy appeared to last up to the age of 5 years beyond which it may wane off gradually unless the person is revaccinated periodically.

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REFERENCES

DASGUPTA, J.—*Indian J. Pub. Health*, **3**: 97, 1959.
HOGBEN, G. H., MCKENDRICK, G. D. W. AND NICOL, C. G.—*Lancet*, **1**: 1061, 1958.
MURTHY, G. S., DIWAN CHAND AND LAL, K. M.—*Indian J. Pub. Health*, **2**: 249, 1958.
ROGERS, L.—*J. Hyg.*, **45**: 19, 1948.
SEAL, S. C.—*Indian J. Pub. Health*, **3**: 181, 1959.

SNAKE BITE AND ITS TREATMENT

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Snake is the traditional enemy and potent killer of mankind. It strikes surreptitiously and its bite may prove fatal. It is estimated that in India not less than 20,000 to 25,000 persons die annually from snake bite. While so many persons die annually from snake bite, only a few serious attempts have so far been made to find an effective treatment for this condition. Unlike epidemics, deaths due to snake bite do not occur only off and on but are a continuous feature every year. This has gone on for centuries and in fact from times immemorial.

It is often said that most of the snakes are non-poisonous. That is true from a zoological point of view. But it is probably not so, when Indian conditions are considered, because out of those snakes which actually bite the man in this country quite a good number are venomous. This is proved by the symptoms and death rate of patients who come with a history of snake bite.

In India most of the deaths from snake bite are the result of bites of the following varieties of snakes:

Elapidae—to this group belong the cobra (*Naja naja*) and krait.

Viperidae—in this group the two most prominent are: Russell's viper and *Echis carinata*.

Snake bites occur in all seasons, but in Northern India they are most frequent in the summer months. During the last summer in the Safdarjang Hospital, we treated thirteen cases of snake bite. Table 1 shows the clinical features, and laboratory findings of these cases. It has been noted that some of the patients had practically no symptoms. Whether this was due to the bite of non-poisonous snakes, or because the venom injected was too small to produce symptoms, or because the treatment adopted was efficacious, can only be a matter for conjecture. The clinical features seen in the rest of the cases confirm that the snakes that bit them were poisonous and in all probability belonged to the viperine variety. The haemorrhage was a very prominent symptom in some of the cases. Two patients brought with them the snakes that bit them. By the kindness of Dr. M. L. Bhatia, Director, Zoology Laboratories, Delhi University, and through him of the authorities of the Haffkine Institute, Bombay, these snakes were identified as vipers (*Echis carinata*). This confirmed our clinical diagnosis.

The following are the details of treatment that was adopted in our cases:

A dose of 10 to 20 c.c. of antivenin was given intravenously in the casualty department. The antivenin used was from the Kasauli Research Institute. It is a bivalent antitoxin against cobra and Russell's viper.

Our cases were first seen in the casualty department, at varying intervals after the bite. This period was usually from ½ to 4 hours. In two cases it was much longer. On admission the casualty medical officer immediately gave incisions over the fang marks. A tourniquet was applied above the wound if the bite was on a limb and the

TABLE 1—SHOWING ANALYSIS OF THE 13 CASES STUDIED.

Name	Age (years)	Sex	Date of admission	Snake	Period that elapsed between the bite and start of treatment (in hours)	Main symptoms	Urine	Bleeding time	Coagulation time	Prothrombin time
1. J.S.	30	M	23- 5-59	Greyish in colour; 3' long; killed	2	Pain along the left leg; swelling of left foot	No R.B.C.	—	—	—
2. R.L.	25	M	4- 4-59	Yellowish in colour; 1½' long; killed	3½	Tingling and burning sensation in the fingers and toes; B.P. 90/65; swelling of right foot	No R.B.C.	Normal	Normal	—
3. R.	50	M	9- 4-59	Greyish in colour; 1' long	1½	Pain at the site of the bite with swelling	No R.B.C.	Normal	Normal	—
4. B.	24	M	15- 7-59	Black with white spots; 1' long	5½	Giddiness, vomiting; bleeding from the gums and mouth; oozing of blood from the wounds; B.P. 100/50	Few R.B.C. present; Albumin in traces	Normal	Normal	—
5. R.S.	30	M	18- 7-59	Spotted 1½' long	1st admission 7½ hours after snake bite in another ward. Antivenin given. 2nd admission 38 hours after snake bite in our ward	Oedema of left leg and foot; blood - stained sputum; bleeding from left foot from the point of incision	No R.B.C.	Normal	Normal	—
6. J.	16	M	25- 7-59	Black with white spots; 2' long	4	Giddiness, vomiting; swelling of right foot; soakage of dressing with blood	No R.B.C.	Normal	Normal	—
7. B.L.	35	M	27- 7-59	Dark in colour; 2' long; called Jalebi snake	2	Giddiness, vomiting; pain in right foot and leg; no bleeding	Albumin + Few R.B.C.	Normal	Normal	—

TABLE 1—*Contd.*

Name	Age (years)	Sex	Date of admission	Snake	Period that elapsed between the bite and start of treatment (in hours)	Main symptoms	Urine	Bleeding time	Coagulation time	Prothrombin time
8. G.R.	40	M	22- 8-59	Black in colour; 2' long	24	Swelling and pain of right arm; bleeding from the site of bite	Albumin in traces; few R.B.C.	Normal	Normal	—
9. K.L.	45	M	29- 8-59	Earthy colour; 1' long	2	Pain and swelling of the limb	No R.B.C.	Normal	Normal	—
10. H.K.	18	F	13- 9-59	Yellowish with spots; 1' long	1½	Swelling and ecchymosis with discolouration of left foot; bleeding from the wound even after tight bandage and gel-foam application; blood transfusion given	R.B.C. present	5 minutes 25 seconds	1 hour 45 seconds	Increased; does not clot even after 22 minutes
11. R.S.	35	M	13- 9-59	Black in colour	½	Giddiness, vomiting, slurring of speech; bleeding from the wound even after tight bandage, and gel-foam application; thrombophlebitis of left thigh; severe pain left leg; blood transfusion given	R.B.C. present	5 minutes 25 seconds	1 hour 10 minutes	Increased; does not coagulate even after 20 minutes
12. L.R.	60	M	10-10-59	Black in colour with spots; 1½' long	1	Swelling of left leg and foot; pain in left leg; bleeding from the site of wound	R.B.C. present; Albumin +	4 minutes 9 seconds	1 hour 10 minutes 50 seconds	Increased; does not coagulate even after 20 minutes
13. H.R.	45	F	17-10-59	Greyish	½	Swelling of right hand; pain in the fingers of right hand; giddiness; bleeding from the gums, blood stained sputum, haematuria, anaemia (++)	R.B.C. present; Albumin (++)	5 minutes 35 seconds	1 hour 20 minutes	Plasma does not clot even after 15 minutes

case seen early enough. The wounds were washed with $KMnO_4$ solution. (How far the use of $KMnO_4$ helps is very doubtful. It may have even some adverse effect on the later healing of the wound if the crystals are applied to the wound). Immediately after admission in the wards another 20 c.c. of antivenin was injected intravenously in some of the cases. If there were any symptoms by that time, this step was considered essential.

Penicillin and streptomycin were injected intramuscularly in the usual doses to prevent secondary infection of the wounds.

The main treatment in the wards, in addition to antivenin which every patient had been given, was the use of corticosteroid hormones. In this group every patient was given either cortisone 100 to 200 mg. daily or prednisolone 30 to 40 mg. daily. Some of the cases bled so much that they became severely anaemic—the haemoglobin falling to a level of about 5 to 7 g. per cent in 3 cases. The bleeding was mostly from the wound. One case had also severe haematuria. Another had haemorrhagic sputum. In some of these cases due to the severity of anaemia and to prevent further deterioration one or two blood transfusions were also given.

The bleeding time and coagulation time were found to be normal in earlier cases, although some of them showed a fair degree of bleeding. It may be mentioned that these tests were performed after the administration of the usual therapy, and not immediately after admission. The prothrombin time could be done only in cases where bleeding was excessive and prolonged.

The rest of the treatment was on symptomatic lines such as allaying of pain, etc.

Discussion

It may be noted that all the 13 cases survived. They recovered fully though in Cases 10, 11, 12 and 13 blood transfusions had to be given in addition.

Table 1 shows that some of the cases had no real symptoms of envenomation. It can be argued that the snakes that bit these patients belonged to the non-poisonous group. While that is possible it is not likely. A greater probability is that either the symptoms were controlled by the treatment that was adopted, or that the dose of the venom injected by the snake in these cases was too small to produce any symptom. In one case (Case 9) which had no symptoms, the snake was identified as *Echis carinatus*. As this snake was rather small, the amount of the poison injected was possibly not enough to produce any symptom. On the other hand, Case 13 who was bitten by the other identified snake (*Echis carinatus*) had very severe symptoms of viperine envenomation. It will be seen from Table 1 that some of the cases had a few minor symptoms such as moderate bleeding from the wound and a little oozing from the gums. Others had very serious symptoms.

It is noteworthy that all of the severe cases also survived, though these patients had been bitten by poisonous snakes of the viperine variety. The mortality from this group is generally very high. In fact *Echis carinatus* is regarded as one of the most poisonous of the Indian snakes. According to Ahuja and Singh (1956) its mortality is 32·8 per cent. It is our impression that the treatment as outlined above, notably the addition of corticosteroid hormones to the routine treatment, has done substantial good in these cases and has been responsible for the 100 per cent recovery and has in addition been instrumental in making most of the cases asymptomatic. It seems doubtful if the serum played any role in saving some of these cases as the Kasauli antitoxin is not against *Echis carinata* venom.

It may be argued that in the absence of controls our observations cannot be justified. While we realise the validity of such a criticism yet as snake bite can be a very dangerous condition, it is not possible to keep controls such as cases who will have only hormone therapy but no antivenin. The other type of control, i.e., cases who may be given no hormones but only antivenin treatment is not necessary because such treatment has been adopted since long throughout India. It is universally recognised that even when a polyvalent serum with the specific antivenin for that particular snake venom has been injected, it cannot save all the cases.

At some future date we hope to be able to carry out some experimental investigations to find out the efficacy of the hormones as well as the above mentioned combined treatment. It is possible that a combination of antivenin and hormones may be better than using either of them alone.

This preliminary report is published, so that other workers may also use this combined treatment in viperine bites and report their findings. This is necessary as data on snake bite from one particular hospital cannot be large.

The mode of action of cortisone can be only a matter for conjecture. Possibly it acts by preventing the action of haemorrhagic substances on the capillary endothelium, or by preventing circulatory collapse which is the cause of death in many cases.

It may be mentioned that Hoback and Green (1953) noted beneficial effects of cortisone and corticotrophin in three cases of snake bite presum-

ably by copperhead moccasin (North American pit viper). Experimentally Allan *et al* (1956) compared cortisone and antivenin in the treatment of crotaline envenomation and observed that cortisone cannot be recommended as the sole treatment for poisoning with highly virulent venoms as those of rattle snakes, and other extremely venomous species of the family Crotalidae. So far as we can find out there has been no trials on *Echis carinatus*. It is possible that the hormone may be effective only in the viperine bites and may not be of much use in those of the other varieties. In fact, one of the authors of this paper had in the past used these hormones in combination with polyvalent antivenin in two cases of snake bite, which from symptoms appeared to be those of Elapidae variety. In none of these cases was it possible to save the life of the patient. However, in these two cases the patients came under treatment many hours after the bite. It is, moreover, possible that the antivenin used in those two cases did not contain the antitoxin for the particular venom causing the symptoms but only the antitoxins against cobra and Russell's viper venoms.

References

Ahuja, M. L. and Singh, G.—Venoms, 1st Ed., 1956. American Association for the Advancement of Sciences, Washington, D.C., p. 341.

Allan, M. W., Weiner, D. and Lukens, F. D. W.—Venoms, 1st Ed., 1956. American Association for the Advancement of Sciences, Washington, D.C., p. 393.

Central Research Institute: Instruction for the Use of Concentrated Antivenom Serum, 1957, Kasauli.

Horack, W. W. and Green, T. W.—*J.A.M.A.*, **152**: 236, 1953.

PRACTITIONERS' SERIES

PREGNANCY AND ACUTE ABDOMEN

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The diagnosis, management and the necessary surgical treatment of a case of acute abdomen come within the purview of a general surgeon. The exception will be in a case where the pregnancy is so advanced as to make the uterus palpable per abdomen or about term where the obstetrician and gynaecologist will be the person called in first. In urban practice and in teaching hospitals—if the patient is known to be pregnant—the surgeon is always the gynaecologist.

The gynaecologist—contrary to the present practice obtaining in our country—should be a suitably trained general surgeon who has, subsequent to a few years of apprenticeship in general surgery specialised in gynaecology. But it is the general practitioner who initially handles the case and should therefore be fully conversant with common conditions leading on to a state of 'acute abdomen' during the ten months of pregnancy and the fortnight following childbirth.

The classical manifestations that make the practitioner think of an acute abdomen are (1) pain in the abdomen with or without an area of special intensity ; (2) nausea, retching even actual vomiting, the vomitus varying with special conditions ; (3) constipation or small evacuations mainly of mucous and blood, inability to pass flatus ; (4) distended abdominal wall which on auscultation may be silent or very nearly so ; (5) manifestations of dehydration, furred dry tongue and (6) evidences of toxic absorption, anxious expression, quick pulse, raised or subnormal temperature.

In discussing any clinical phenomenon in association with pregnancy—a routine method of taking the case should be adopted. To start with, the nine months of the period of gestation are divided into three periods of three months each. The symptoms, in so far as the abnormalities due to the pregnancy state are concerned, are in most cases typical of each one of these three periods. When a patient complains of symptoms suggestive of an 'acute abdomen' it is worthwhile to find out whether the condition is being caused by the pregnant uterus as such or whether the cause is of extra-uterine origin. The following conditions may arise during pregnancy which may simulate the manifestations of acute abdomen.

Excessive vomiting between the fourth to the twelfth week of pregnancy—may be accompanied by acute abdominal tenderness, and absolute constipation. The patient may be markedly dehydrated. The pulse may be very quick and there may be a rise of temperature. The abdominal wall, however, is seldom distended and intestinal sounds are not absent on auscultation. In severe cases, the liver dullness on percussion is apparent over a limited area. If the abdominal wall is scaphoid—the possibility of any acute mischief in the abdominal viscera may be excluded. On examination of the urine, evidences of ketonuria will be found. A simple enema will produce evacuation of faeces and flatus. Parenteral infusion of fluids with glucose, with or without insulin, will alter the clinical picture within 24 hours' time.

Acute pyelonephritis on the right side at or about the fifth month of pregnancy closely simulates acute appendicitis. The attack is ushered in with fever and generalised abdominal pain. Vomiting accompanies the rise of temperature, bowels are constipated. The abdominal pain settles down in the 'appendix' area. The patient does not look ill or toxic. The tongue remains moist. The act of micturition is painful. The examination of the urine shows increased albumen contents and considerable number of pus cells. Parenteral and oral instillation of fluids and combination of sulpha drugs control the temperature and diminish the pain.

Complications associated with extra-uterine gestation are the commonest manifestation of 'acute abdomen' during pregnancy. The history is typical. The sudden appearance of acute abdominal pain sufficient to cause unconsciousness for a variable period and then followed by apparent severe anaemia and pallor is typical of an acute rupture of extra-uterine gestation sac. The degree of the 'acuteness' is dependent on the amount of blood spilt in the peritoneal cavity. If the leakage is slow and followed by intraperitoneal clotting and sealing off of the bleeding point, the condition is not acute. But so long as the gestation sac is 'alive', there is always the possibility of an acute attack being precipitated. Once diagnosed, the condition should be treated surgically as soon as possible and practicable.

An incarcerated retroverted gravid uterus, if not diagnosed and treated in the early stages, may threaten to rupture and produce acute abdominal symptoms. In the early stages the condition always manifests itself by causing retention of urine. If the bladder is drained with an indwelling catheter, the uterus corrects its position. If, however, the uterus is bound down with adhesions in the pouch of Douglas, spontaneous correction is not practicable and in the majority of cases, expulsion of the uterine contents *per vaginam* results. If however, the uterine wall is thinned out as in anterior or lateral sacculation, acute abdominal symptoms appear. Such a complication, fortunately, is a rare event, but deserves to be noted. The treatment is surgical interference, viz., laparotomy, hysterotomy and a suitable operation for ventrosuspension. In some cases of rapid enlargement of the uterine body and the consequent thinning of the wall as in malignant types of hydatidiform mole, a rupture may be threatened. This is also a rare condition. Vaginal evacuation is not recommended in such cases.

The twisting of the pedicle of an ovarian tumour is a common gynaecological complication. Forty per cent of these twists take place during pregnancy. Sixty-five per cent of the cases, in my experience, take place on the right side and in persons of the age group of 20 to 30 years. Cases have to be diagnosed from appendicular attacks. The symptoms are however of gradual onset. Typical abdominal symptoms of vomiting and constipation appear late, frequently after there has been considerable haemorrhage in the substance of the tumour or the tumour might have burst and the contents spilt into the peritoneal cavity. Cystic teratomata so called 'dermoids' are the commonest tumours. Fimbrial cysts with long thin pedicles are the next commonest. A ruptured dermoid may produce an intestinal obstruction as a late complication. The cheesy sebaceous contents produce local irritation giving rise to the fibrinous exudates which on organisation produce bands, and these later involve a loop or loops of the intestines causing mechanical obstruction. If surgical interference is resorted to early, pregnancy need not be interfered with, it is expected to continue and end normally.

In the pregnant uterus, in connection with what is generally described as toxaemia, the normally situated placenta undergoes certain pathological changes. There may be intra-uterine haemorrhage which reveals itself as vaginal bleeding. In severe manifestations of toxaemia, the placental site also undergoes degenerative changes. In a few cases the whole uterine wall may be affected so as to cause retention of haemorrhage within the retroplacental area and this subsequently infiltrates the muscular layers of the uterine wall. Ultimately the haemorrhage may trickle into the peritoneal cavity with or without loss of continuity in the uterine wall. Such cases present themselves as cases of acute abdomen, particularly if this phenomenon presents before the sixth month of pregnancy when the classical picture of toxaemia is an infrequent clinical entity. A general surgeon does not find the typical picture of acute abdomen. An obstetrician does not find any gross evidence of internal haemorrhage and so he treats the general toxaemia with sedatives and salt restriction in diet. The blood-pressure remains fluctuating between abnormal and high normal levels and because of the toxaemia resuscitation with glucose and salt is usually deferred. When symptoms of acute disaster in the abdominal cavity become evident it may be too late to save the patient's life—at any rate too late to preserve the uterus as also the foetus *in utero*. Early diagnosis followed by early laparotomy should be resorted to. On opening the abdomen—if blood is found under the parietal peritoneum, immediate decision to remove the uterus with its contents should be made. Try-

ing to preserve the uterus after a hysterotomy is waste of valuable time in most cases.

With the availability and popularity of the antibiotics, gross manifestation of puerperal sepsis is not commonly met with. But in rural areas fulminant puerperal sepsis is not infrequently seen. Criminal interference and irregular and insufficient medication with antibiotics often result in dangerous perimetritis. This inflammation extends into the general peritoneal cavity. The causative organisms are usually the haemolytic streptococci or one of the Clostridia—the gas producing *Cl. aerogenes capsulatum* or *Cl. Welchii* being the commonest. The cold clammy skin of the patient, the anxious expression, the dry furred tongue and the tender distended abdomen may all simulate the picture of peritonitis due to a perforated viscus or strangulation of an internal hernia—particularly so if the history of a criminal abortion is withheld from the practitioner. One has to be very careful. It is not enough to depend on the antibiotics and other measures for resuscitation and temporisation before undertaking surgical interference. Death is very frequent and, therefore, the practitioner should carefully guard himself from the possibility of a police enquiry. Medically—the prophylactic measures against the probability of tetanus infection should be adopted. The peritoneal cavity can usually protect itself from most infections—provided the patient's strength can be maintained and superimposition of mixed infection can be controlled. Before launching into a ventral laparotomy, drainage of the cavity with a posterior colpotomy has produced good results in many cases.

The other generally treated causes of 'acute abdomen' may operate with pregnancy. Acute cholecystitis with manifestations of pancreatic mischief, acute appendicitis, and intussusception are not uncommon. While dealing with these—the routine should be not to interfere with the uterus and its contents. Very often in cases where pregnancy is advanced beyond the sixth month—an inexperienced operator may evacuate the uterine contents per abdomen to get more room to deal with the surgical condition. This is not ordinarily recommended. Modern anaesthetic measures can be depended upon to get absolute relaxation and this will be a great help. It is a fact that in many cases there may be spontaneous evacuation of the uterus after the surgical procedure. This need not cause as much anxiety as in the case of deliberate hysterotomy where the uterus is the site of a wound and a very vulnerable site of infection, not to speak of the devitalisation of the patient in consequence of haemorrhage which may follow a deliberate hysterotomy of a premature gravid uterus.

It will be realised from the above discourse that the acute abdominal condition may develop with or without pregnancy. It is all very important to try and arrive at a diagnosis as early as possible. With early diagnosis if modern methods of medicinal and surgical treatment are adopted—success is assured in most cases. If the general practitioners will benefit from the above in coming to a diagnosis—an important step in the antenatal management will be achieved.

SPECIAL ARTICLE

THE POPULATION PROBLEM IN INDIA

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Introduction

The population problem is probably the gravest issue facing mankind. For India it has become the basic question. On its proper solution depends all future progress. The greatest impact of recent scientific discoveries has been on the life span of human beings. The lowering of the mortality rate has increased our life span—the expectation of life at birth in India in 1921-30 was 26·89 years and in 1941-50 it rose to 32 years. In 1951-1960 it is expected to be about 42 years—an increase of nearly 15 years in a thirty-year period or an average gain of 5 years per decade. In the West between 1840 and 1890 the average duration of life increased by more than one year per decade, but from 1890 to the present day this increase has been at the rate of three years per decade or more.

A grave result of applying scientific medicine for improving people's health in under-developed countries lies in the aggravation of the population problem. This has happened in Puerto Rico and Ceylon, by the concentration of efforts on reduction of mortality alone. Ceylon has cut its death rate by 50 per cent in 10 years—it dropped in 1956 to 8·8 from 20·3 in 1946, but its birth rate was as high as 36·4 in 1956. Science can be used to reduce deaths and it should also be used to reduce births. This is a humane, sensible and a moral approach.

The control and stabilisation of the population is a matter of life and death for India. Japan has done it and there is no reason why India cannot do it. In 1920, the population of Japan was 51 million and in a few decades it has risen to 91

million. This rapid increase drove the Japanese 'Diet' into drastic action in 1948. Abortion was legalised, and health centres and family planning clinics were established throughout the country. As a result, the birth rate fell from 33·7 per 1,000 in 1948 to 17·2 in 1957. Reduction in mortality in India needs to be balanced by artificial limitation of the population by family planning.

The population problem of India received scant attention from the Government a decade back. Even the Health Survey and Development Committee of the Government of India in 1946 did not lay down any clear policy on this problem. We in India seem to have suddenly become conscious of this problem. The Indian Planning Commission (1956) recently observed thus: "The problem of regulating India's population from the dual standpoint of size and quality is of the utmost importance to national welfare and national planning".

Demographic Cycle

The history of world population since 1650 suggests that there is a demographic cycle of five stages through which a nation passes—the five stages being high stationary, early expanding, late expanding, low stationary, and declining. Up to 1920, India was in the stationary stage, as high death rates cancelled out high birth rates. But from 1921 onwards India has passed on to an early expanding stage in which death rates had started falling, and still falling, but birth rates continue at or near to the maximum. The third stage, i.e., late expanding, in which the birth rate also begins to decline but the population continues to grow because the number born exceeds those dying, may be developing in certain educated but hard-pressed lower middle class families living in cities. But 82·9 per cent of our population living in 558,089 villages is still in the early expanding stage, and so also is the majority of the urban population.

India's Picture

The population of the world is 6 to 7 times, but the total land is 40 times, that of India—land *per capita* being 13·5 acres as against 2·25 acres in India. The average citizen of the world uses only one quarter of the land on which he lives as 'agricultural area', and of this he uses one-third as crop-land and fallow. In India over two-fifths of the entire land is used for agricultural purposes and almost all of it is cultivated. The world citizen cultivates 1·26 acres as against 0·96 acre in India and 0·63 acre in the State of Uttar Pradesh. Europe, the most densely populated continent of the world, is, in fact, less densely populated than India, and the average European has one third more land *per capita* than the average Indian. The density of population per sq. kilometer is 120 in India, 93 in Europe (average of Northern and Western, Central and Southern Europe), 22 in the U.S.A., 66 in China and 9 in U.S.S.R. India is both over-populated and underdeveloped.

In India, 706 persons out of every 1,000 are engaged in producing their own food and a small surplus which just falls short of being sufficient for the other 294. In the U.S.A., 128 persons per 1,000 produce a surplus in excess of their own food requirements which not only suffices for the needs of the other 872 but yields a margin for export to other countries. North America holds 80 per cent of the total world surplus stocks in agricultural products.

Recent Trends in the Population of India

1921 was the turning point for the population in India. During the 30 years between 1891 and 1920 the population increased by 12·2 million only. But the figures for the subsequent 10-year periods are: (*a*) between 1921 and 1930 the population increased by 27·4 million; (*b*) between 1931 and 1940 by 37·3 million; and (*c*) between 1941 and 1950 by 44·1 million.

During the 30 years following 1921, India's population has increased from roughly 250 million to 360 million—an addition of nearly 110 million (about twice the population of United Kingdom of Great Britain and Northern Ireland, the size of Uttar Prodesh), as against an increase of only 12 million during the 30 years between 1891 and 1920. This phenomenal increase in the population during the 30 years following 1921 is due to the fact that 'abnormal deaths' due to famines, pestilences, epidemic and other diseases, which used to claim many victims before, were prevented from occurring. For example, during the last decade we have witnessed a large reduction in mortality from cholera, plague and malaria. The 'mean decennial rate of growth' during the first thirty-year period (1891-1920) was as low as 1·7 per cent, but with the disappearance of the natural checks during the second thirty-year period (1921-1950) the 'mean decennial rate of growth' rose to 12·1 per cent. Demographic trends indicate that the population at present is increasing at the rate of about 2 per cent per annum, one-and-a-half to two times the 1921-1950 rate. Nearly 17,000 persons a day or 6 to 7 million a year are being added to India's population.

Agricultural Production

Let us now consider the effect of this growing population on India's food resources. The area of agricultural land *per capita*, as given by the three indices of cultivation are shown in Table 1.

Table 1—Showing per capita Land in India

Nature of land	Per capita land (in acres) in different years		
	1891	1921	1951
1. Cultivated land ...	1·09	1·11	0·84
2. Double-crop area ...	0·12	0·13	0·10
3. Irrigated area ...	0·16	0·18	0·14

The above figures show that the area of agricultural land *per capita*, as measured by the three indices of cultivation, was a little higher in 1921 than in 1891 ; but during the second thirty-year period every one of these three factors declined steadily, and it was substantially lower in 1951 than in 1921. The heaviest drop has been in the area of cultivated land—nearly one-fourth of the 1921 level. The rate of growth of the population has substantially outstripped the rate of progress of cultivation in spite of continued efforts for more crops, increased irrigation, use of manures and fertilisers, better seeds and better methods of agriculture. During the Second Five-Year Plan (1956-57 to 1960-61), with all these efforts, India has been averaging a three-and-a-half per cent annual increase in agricultural production. (The world rate of increase in food production in 1958-59 was 4 per cent). In 1958-59, India attained a record food production of 73·5 million tons (against 63 million tons in 1957-58 and 68·7 million tons in 1956-57). But even then there is likely to be a shortage of 28 million tons of foodgrains by the end of the Third Five-Year Plan. Early in 1959, thirteen U.S. experts from the Ford Foundation published a report which estimated that the population of India would increase by 50 million during the five years of the Third Five-Year Plan (1961-62 to 1965-66) and India would require 110 million tons of foodgrains a year by 1965-66. The present trend of production would yield 82 million tons.

India's production of foodgrains stagnated or declined slightly from 1890 to 1945 ; the annual quantity available *per capita* thus fell from 600 to 400 pounds. In 1958, with nearly 400 million inhabitants, there was an average of 410 pounds available in a year of good production. India changed over from being a net exporter of foodgrains into a net importer of foodgrains around 1921. At that time production *per capita* and consumption *per capita* were in balance. Seventy years ago there was a surplus of about 4 million tons per annum, but during the last ten years India was importing 2·5 million tons of foodgrains on an average per year, roughly at a cost of Rs. 1,000 million a year. In 1950 a National Sample Survey showed that the average rural household produced 19·9 maunds (one maund is equal to 82 2/7 lb.) of foodgrains but ate 26·4 maunds during a year. The average yield (less seed) of one acre sown to all foodgrains is 6 mds. in the country as a whole, the average rate of consumption of foodgrains per head of population per annum is 4·5 mds. (including wastage in storage and cattle feeding). India's shortage of foodgrains, round about 1951, was 3·4 million tons—the difference between 59 million tons of consumption and 55·6 million tons of harvested yield. This shortage was equivalent to the foodgrains needed for consumption during 21 days in a year.

The Future

Preventable deaths continue to occur in India, in especially large numbers among infants and pre-school children. Out of 27 deaths of persons of all ages occurring annually among 1,000 persons, 11 deaths occur among children under 5 years of age, and 7 of these are below one year of age, i.e., 40·7 per cent of the total deaths are of children below 5 years, and 25·9 per cent of the total deaths are of infants below one year of age. India has a young population when compared with Western countries which have an ageing population. In the U.K. and France nearly one-fifth of the population is 55 years and above, while in India it is only one-twelfth.

With increased and better maternity and child welfare services, and control of famines and communicable diseases, the 'avoidable deaths' are being prevented and the rate of population increase is accelerated. Unless the rate of growth of population is checked, population will continue to increase during the next thirty years (1951-80) at a faster rate than it did during 1921-50. It is expected to increase from 360 million in 1951 to 410 million in 1961, 460 million in 1971, and 520 million in 1981. By the year 2050, it would be 2,000 million ; in other words, every sq. mile of India would have five times the population which it has at present. Therefore, in order to avoid such a catastrophe we must learn to plan our families to a limit which the country can support.

The current rate of consumption of foodgrains is 4½ mds. (1/6th of a ton) *per capita* per annum. The current rate of increase of population is about 6·5 million each year, i.e., we need 6·5/6=1·1 million tons of additional foodgrains per annum. This

is becoming increasingly difficult to achieve. Agricultural development, with limitation of births to approximate parity with deaths, to get a stationary population, has to be India's aim. It might be possible to achieve an over-all increase of agricultural productivity by about one-third above the 1951 level, corresponding to the needs of a total population strength of 450 million. This population may be reached round about 1969 or earlier. This gives India a period of not more than ten years for planned measures to limit births. (A special study group of India's Statistical Organisation in 1959 estimated that India's population would be 430·8 million on March 1, 1961 and 479·6 million in 1966, a much higher estimate than that made by the Census Commissioner, Government of India, in 1951).

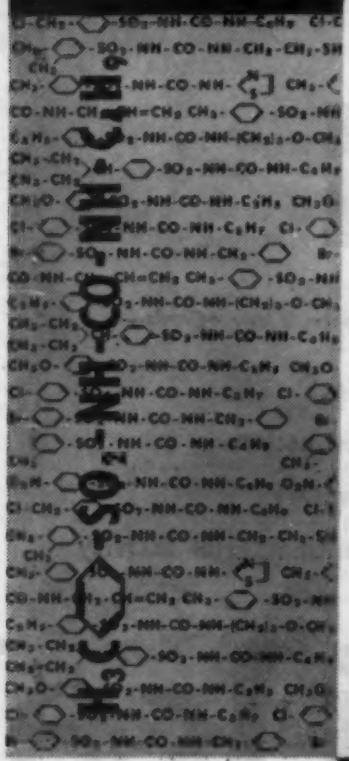
India's aim, as put by the Census Commissioner to the Government of India (1951-Census), is to limit the number of births so that the latter does not materially exceed the number of deaths, and thus achieve substantially a stationary population before India's population exceeds 450 million. This could be achieved if the number of child-births by every married couple was restricted to three. Birth of more than three children according to the Census Commissioner is 'improvident maternity'. The incidence of improvident maternity in India is 40 to 45 per cent, i.e., out of every 40 births which occur among every 1,000 people in the course of one year, 17 births are of this nature. If people can be induced to avoid improvident births, India's birth rate would then fall from 40 to 23 (40 minus 17=23). India's death rate is 27, and out of these deaths 11 are of children under 5 years of age, which would be reduced to six with the fall in the birth rate. In other words, avoidance of improvident maternity will not only reduce the national birth rate from 40 to 23 but it will also reduce the national death rate from 27 to 22 (27 minus 5=22) at the same time. The net result will be to reduce the rate of growth of population from about 13 per cent per decade to about 1 per cent per decade. By 1969 the total agricultural productivity should increase from the 1951 level of 70 million of annual tons to about 94 million of annual tons and the birth rate decrease from 40 to 23 by the avoidance of 'improvident maternity' which is defined as child-birth occurring to a mother who has already given birth to three or more children, of whom one at least is alive. This is the national policy and these are the targets, as determined by the Census Commissioner, to be achieved in regard to the population in India. The Government of India and the State Governments are giving a high priority to the family planning programme. At the beginning of the Second Five-Year Plan (April 1, 1956) there were 147 family planning clinics (21 in rural areas), and a few maternity and child health centres giving family planning advice, but hardly any medical institution where instruction in family planning was imparted. By the end of 1959 it was encouraging to find that there were 1,147 clinics (712 in rural areas), 1,318 maternity and child health centres giving family planning instruction, 278 districts with family planning services, 27 medical colleges offering family planning courses and 65 training centres with family planning clinics.

The question is how to achieve the targets and achieve them among 83 per cent of the illiterate and ignorant population, living in more than half-a-million villages of India, with no toilet facilities. One thing which we have to bear in mind in recommending any suitable method of family planning in India is its cost. With a *per capita* income of less than Rs. 300 per annum, even foam tablets are beyond the purchasing capacity of many in India. It needs to be seriously considered why coitus interruptus, which in the majority of cases is found to be an effective and successful method and does not cost anything, cannot be advocated as a measure for family planning? The majority of the top French medical men, gynaecologists, neurologists and psychiatrists considered it to be harmless (Dickinson, 1950). An investigation in the U.K. by the Royal College of Obstetricians and Gynaecologists, as pointed out by the Census Commissioner, showed that 44 per cent of the couples married in 1935-39 and who had practised some form of birth control between marriage and 1946, had practised coitus interruptus, and the 'pregnancy rate' during the practice of this method was higher only by one-fifth as compared to the appliance methods. In a survey on birth control by questionnaire among the medical men in Uttar Pradesh in 1951 (Prasad, 1951) it was revealing to know that of those who replied and were practising birth control, as many as 42·4 per cent were practising this method and it was the most extensively practised method in the group. Further, even where the wives were doctors, this was the most popular method. The writer's contention with medical men and women in India is: Why feel shy to advocate and preach what the majority of us successfully practise ourselves?

Summary

For India's development and progress it is necessary to have a satisfactory solution of its population problem. Therefore, a plea is made that as science can be used to reduce deaths it should also be used to reduce births.

Facts and Figures



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JOURNAL OF THE
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CALCUTTA, OCTOBER 1, 1960

STANDARDS OF MEDICAL EDUCATION IN INDIAN MEDICAL COLLEGES

Prof. René Sand, a celebrated Professor of Belgium has rightly said: "the history of medical education is dominated by improvements in pedagogy, which enrich its methods; by progress of science and technology which widens its scope; and by needs of society which dictate its curriculum."

The number of medical colleges in India has been fast increasing in recent years; it rose from 30 in 1951 to 55 in 1960, and may come to be 75 by 1965. The strength in each college is also rapidly increasing with the result that the intake has doubled from 2,500 to 5,000 students per year; the corresponding outturn will increase from 14,000 in the Second Five Year Plan period (1956-61) to about 20,000 in the Third Five Year Plan period (1961-66). This has been necessitated by the low proportion of doctors to population of about one in 6,000 for the country as a whole. The ratio in urban areas is five times that in rural areas and this is behind the main problem of the dearth of doctors in rural areas. While about 75 per cent of the population live in rural areas, nearly as much of the doctors live and practise in urban areas. To combat this shortage of qualified doctors for rural areas, it would be a wrong step if once again, attempts are made by the Planning Commission or the Central and the State Governments to establish a standard of medical education that is lower than the degree course prescribed by the Medical Council of India and the Medical Faculties of the Indian Universities. The rural areas should be, as in the urban areas, manned by medical graduates and preferably by experienced medical graduates who had been trained, to some extent, in public health and social medicine. There would not be any dearth of such medical personnel to serve rural areas, if these doctors are financially compensated and provided with fairly comfortable residential accommodation. Wherever necessary, provision should also be made by the Government for the education of children of these doctors in the urban areas.

Similar to the acute shortage of doctors in rural areas, more acute shortages exist in other auxiliary and ancillary personnel like nurses, health visitors, sanitary inspectors and auxiliary nurse-midwives and midwives. This explains the halting progress in the implementation of programme of rural health services in the country during the Second Five Year Plan period; and also will have the same result in the Third Five Year Plan period, unless steps are taken to correct this position the soonest possible. For example, the total number of primary health centres in the Community Development Blocks envisaged by the Health Panel of the Planning Commission in 1955 for the Second Five Year Plan period was about 4,000, each centre covering 60,000 population, but actually no more than 1,500 primary health centres are functioning today and even these are not fully manned with the personnel recommended.

In addition to the dearth of personnel we are faced with a new problem requiring large increases in training personnel in all medical colleges to keep up the standards of teaching and training. It is essential to focus attention on this problem also and solve it in a satisfactory manner. Unless that is done, the object of opening of new medical colleges and increasing the strength in existing colleges is sure to be defeated.

Let us now discuss the standards of medical education. Primarily these may be divided under two broad heads; viz., (1) facilities provided and (2) teaching and training methods adopted.

The facilities provided are:

(a) Accommodation: When buildings are provided initially, a master plan should be ready so that money may be found for staff, equipment and other expenditure, both recurring and non-recurring. It is essential for the efficient running of the institution. But this seems to be rarely followed.

(b) Staff: The Indian Medical Council responsible for standards of medical education has laid down norms for professors and assistant professors including *inter alia* post-graduate and/or research qualifications in addition to at least 7 or 5 years' teaching experience. These important recommendations are often not followed in practice. To ensure the maintenance of and enhancement in the standard of teaching, the minimum teaching experience necessary for a professor, an associate professor or a reader cannot be lowered under any circumstances. If the required number of trained and experienced personnel is not available, the number of new medical colleges must be curtailed accordingly.

(c) Equipment: Scientific equipment for various departments of medical colleges and attached teaching hospitals is mostly imported

from abroad. Foreign exchange restrictions particularly for hard currency countries cause inordinate and unpredictable delay, and often the equipment is never procured. Even when procured the equipment cannot be used adequately for teaching and training for want of spare parts and/or repairs. A central institution should help the colleges and teaching hospitals to procure the equipment, and should, in addition, stock spare parts and attend to necessary repairs. Attempts must also be made for manufacture of equipment and spare parts in India.

(d) Library: As most textbooks for medical colleges and a large number of journals are imported from abroad, a central organisation may, as in case of equipment, be set up to cater to these needs, easing foreign exchange and import restrictions. Further, as most of the medical colleges have been newly started, back-numbers of journals have to be procured and photostat copies of scientific articles supplied to research workers. The Indian National Scientific Documentation Centre (INSDOC) should be able to help in regard to this. Serious attempts must also be made for the publication of suitable medical textbooks in larger numbers in India.

(e) Museum: Most college departments have their own museums in addition to or as part of a central museum. The import of audio-visual equipment and other aids for teaching and training like cine cameras, epidiascopes, film strip projectors and tape-recorders with the help of a central organisation as already indicated above should prove valuable.

So much for facilities. Let us now discuss the important subject of teaching methods and techniques.

While the provision of providing the facilities is the responsibility of Governments or heads of institutions; the methods and techniques adopted for teaching and training is the responsibility of college departmental heads co-ordinated by principals or deans of the colleges and teaching hospitals. These are described below.

(a) Didactic lectures: These are necessarily limited to an hour each. As students mostly depend on these lectures, to save their time in taking elaborate notes, cyclostyled lecture notes should be given *in advance* of each lecture. Such notes when interleaved will help the students to jot down anything extra. This may be also supplemented by their own notes taken from textbooks or reference books and journals from study at home or in the library during elective hours.

(b) Practical exercises in laboratories: Most departments follow up lectures by practical exercises which are rarely found in textbooks and hence students must be helped in this case too by cyclostyled sheets given *in advance*.

(c) Demonstrations: Most disciplines give, in addition to practical exercises, several demonstrations, e.g., anatomy (dissection); physiology and pharmacology (animal experiments); and medicine, surgery, and obstetrics and gynaecology (clinics in out-patients or in-patients departments); preventive and social medicine (field visits of total family care). These require small batches of students, and need adequate staff guidance and supervision.

(d) Seminars and group discussions: These are necessary for staff members of overlapping disciplines so that heads of departments know where a subject is being covered more than once and what is more dangerous, leaving gaps. For example, nutrition and parasitology are taught under several subjects and unless staff members know what is covered by each department there would be no integration and students would suffer in consequence. Group discussions among senior students and post-graduates are also helpful in clearing doubts, particularly before examinations.

(e) Tutorial classes: The system of tutorial classes so well developed in western countries is rarely practised in this country. As most of the students cannot afford private tutors, tutorial classes of small groups will help to further their knowledge.

The assessment and grading of departments and medical colleges is another important point. The present situation in India is typified by the large increase in the number of medical colleges and the strength in each college during the past decade. Further increases are anticipated during the next five years, which call for assessment of standards of teaching and training. Obviously, we have more than enough colleges. The real need is for adequate and suitable teachers, and this calls for improving standards. Further, arising out of the recommendations of the First World Conference on Under-graduate Medical Education, London, 1953, closely followed by the All-India Educational Conference, New Delhi, 1955, all medical colleges in India are adopting various changes in curriculum, hours, teaching and training methods, etc. In particular the aims and objectives of medical education as it is now realised are to produce a 'Basic doctor', so that specialisation comes later during post-graduate courses.

Up to 1920 the population in India was stationary but during the last 40 years it has passed on to an early expanding stage in which death rates had started falling but birth rates continue at or near to the maximum. India's population between 1891 and 1920 increased by 12 million only but between 1921 and 1950 the population increased by 110 million. The population is now increasing at the rate of 2 per cent per annum.

In India the land *per capita* is only 2·25 acres as against an average of 13·5 acres in the world and the density of population per sq. kilometer is 120 as against 93 in Europe. 70·6 per cent of the population in India is engaged in agriculture but even then the production falls short of the requirements.

The rate of growth of the population has substantially outstripped the rate of progress of cultivation. It is estimated that by 1965-66, India would need 110 million tons of foodgrains while the present trend of production would yield only 82 million tons.

According to the estimates in 1951 of the Census Commissioner to the Government of India, it might be possible to achieve an over-all increase of agricultural productivity by about one-third above the 1951 level, corresponding to the needs of a total population strength of 450 million. He estimated that this population may be reached round about 1969 but latest estimates indicate that in 1966 the population may reach about 480 million.

In order to limit the number of births so that they do not materially exceed the number of deaths, and thus achieve a stationary population, the Census Commissioner calculated that the national population policy should be based on the avoidance of 'improvident maternity'.

The question before India is how to achieve it and achieve it quickly through democratic means. With a *per capita* income of less than Rs. 300 per annum, even foam tablets are beyond the purchasing capacity of many in India. In the writer's opinion, for the present, coitus interruptus, with whatever limitations and disadvantages it has, appears to be the most practicable method.

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REFERENCES

Demographic Year Book, 1958, Statistical Office of the United Nations, United Nations Publications, Geneva.

GOPALASWAMI, R. A.—Census of India, 1951, Vol. 1, India, Part I-A-Report, 1953, Manager of Publications, Delhi.

India's Food Crisis and Steps to Meet It, 1959, Ford Foundation, Delhi.

PRASAD, R.—Census of India 1951, Vol. II, Uttar Pradesh, Part I-A-Report, 1953, Superintendent, Printing and Stationery, U.P., Allahabad.

Report of the Health Survey and Development Committee, Government of India, Manager of Publications, 1946, Delhi.

Second Five-Year Plan, 1956, Government of India Planning Commission, Manager, Government of India Press, Delhi.

CASE NOTE

GUMMA OF THE HEART*

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Myocardial lesions have been described in congenital as well as acquired syphilis. The best known lesion, gummatous myocarditis can be diffusely distributed, or assume the localised form known as 'cardiac gumma'. The former is very rare and recognisable only by microscopic studies. Sohval (1935) observed that 97 cases of cardiac gumma had been reported upto 1935 and later Kothare (1940) mentioned that 112 cases had been published. Even so, the condition is rare.

CASE REPORT

A 15 year old boy, otherwise normal in health, felt giddy on his way to school and collapsed. He was picked up by passersby and brought to the hospital. The casualty medical officer on duty (C.R.B.) found him dead. He performed an autopsy at which was found congestion of the lungs, spleen, liver and kidneys. The pericardial cavity contained 10 ounces of haemorrhagic fluid and the heart was enlarged with a spherical swelling, 6·0 cm. in diameter, situated on the left border and the anterolateral aspect of the left ventricle. No lesion was observed in any other organ. The heart was sent to us for further investigation.

Description of the specimen—The heart weighed 235·7 g. Viewed from the anterior aspect, there

* Read at the 36th All-India Medical Conference, Indore, December 1959.

was a spherical bulge situated on the convex margin of the left ventricle measuring 6·0 cm. in diameter (Fig. 1, *vide* Plate). The swelling was lobulated, soft and fluctuant in parts and congested in others. Viewed from the posterior aspect (Fig. 2, *vide* Plate), the swelling looked even more prominent as a protuberence which extended from 2·5 cm. external to the interventricular septum to 2·5 cm. from the descending branch of the left coronary artery. The subepicardial fat was more than usual for a boy of 15 years. On opening the chambers of the heart it became apparent that the swelling measuring 6·0 × 4 cm. was situated in the left ventricular wall itself and was communicating with the cavity of the left ventricle through a pin-point orifice situated in the lower pole of the swelling. Greatly thinned out myocardium, varying in thickness from 1 to 3 mm., constituted the wall of the cavity. The upper portion of the cavity was mostly occupied by a yellowish cheesy material, although in some parts, between the wall of the cavity and the cheesy material, a layer of laminated blood clot could be recognised. The lower portion of the cavity was empty, except for a thin layer of blood clot. The valves and chambers of the heart were normal. The piece of aorta about 5 cm. long received with the specimen showed no macroscopic lesions of atheroma or syphilis.

The microscopic features of the lesion consisted of a central necrotic area, containing nuclear and cytoplasmic debris and occasional necrotic myocardial fibrils. Bordering the necrotic area, there was a zone of dense granulation tissue in which could be recognised lymphocytes, eosinophils, an occasional neutrophil and numerous plasma cells, besides some giant cells of Langhans' type and epithelioid cells (Fig. 3). Some of the blood vessels showed endarteritic changes and perivascular cuffing. The outer zone of granulation tissue appeared to merge into an area of dense fibrous tissue (Fig. 4, *vide* Plate).

Search was made for spirochaetes in the lesions but none were found.

Comments

Gumma of the heart referred to in the literature as localised gummatous myocarditis or cardiac gumma is a rare condition. It may be solitary or multiple, varying in size from a pinhead to a fowl's egg. The most frequent site is said to be the left ventricular myocardium, particularly the basal portion of the interventricular septum, although cases are reported where there was involvement of the papillary muscles and the cardiac valves. Cases of interference with cardiac function and heart block have been described when gummas were so situated. The case under report, perhaps, because of its situation in the wall of the left ventricle, manifested no clinical disturbances before death.

Cardiac gummas, like gummas in other organs, may heal entirely due to the marked tendency to fibrosis. Calcification has also been noticed. Alternatively, due to the extensive softening of the gumma and communi cation with the endocardial chambers, a cardiac aneurysm may result. In the present case, the gumma had followed the last mentioned course. Death was probably due to leakage from the aneurysm into the pericardial cavity, which, however, could not be detected by naked eye examination.

The histological features of the lesion in this case, particularly the presence of remnants of myocardial fibrils in the central necrotic area, are quite typical of gumma. Cases of cardiac gummas reported in the literature were in adults and due to acquired syphilis but it is known that similar lesions can occur in congenital syphilis. The age of the present case would suggest that the gumma was possibly a manifestation of congenital syphilis, although no other lesions typical of congenital syphilis were detected.

Spirochaetes were not found in the lesion. Sohval (1935), Haam and Ogden (1938) and Kothare (1949) have also observed that spirochaetes are not easily demonstrated in tertiary lesions and that this does not negative the diagnosis.

References

Haam, E. V. and Ogden, M.A.—*Arch. Path.*, **26**: 525, 1938.

Kothare, S. N.—*Indian M. Gaz.*, **84**: 137, 1949.

Sohval, A. R.—*Arch. Path.*, **20**: 429, 1935.

APPEAL FOR CONTRIBUTION TO THE ORISSA FLOOD RELIEF FUND

The following appeal from Members of the Orissa State Branch, I.M.A., has been issued under the signature of Dr. G. B. Mohanty, Hony. Secretary, Orissa State Branch of I.M.A., Cuttack :

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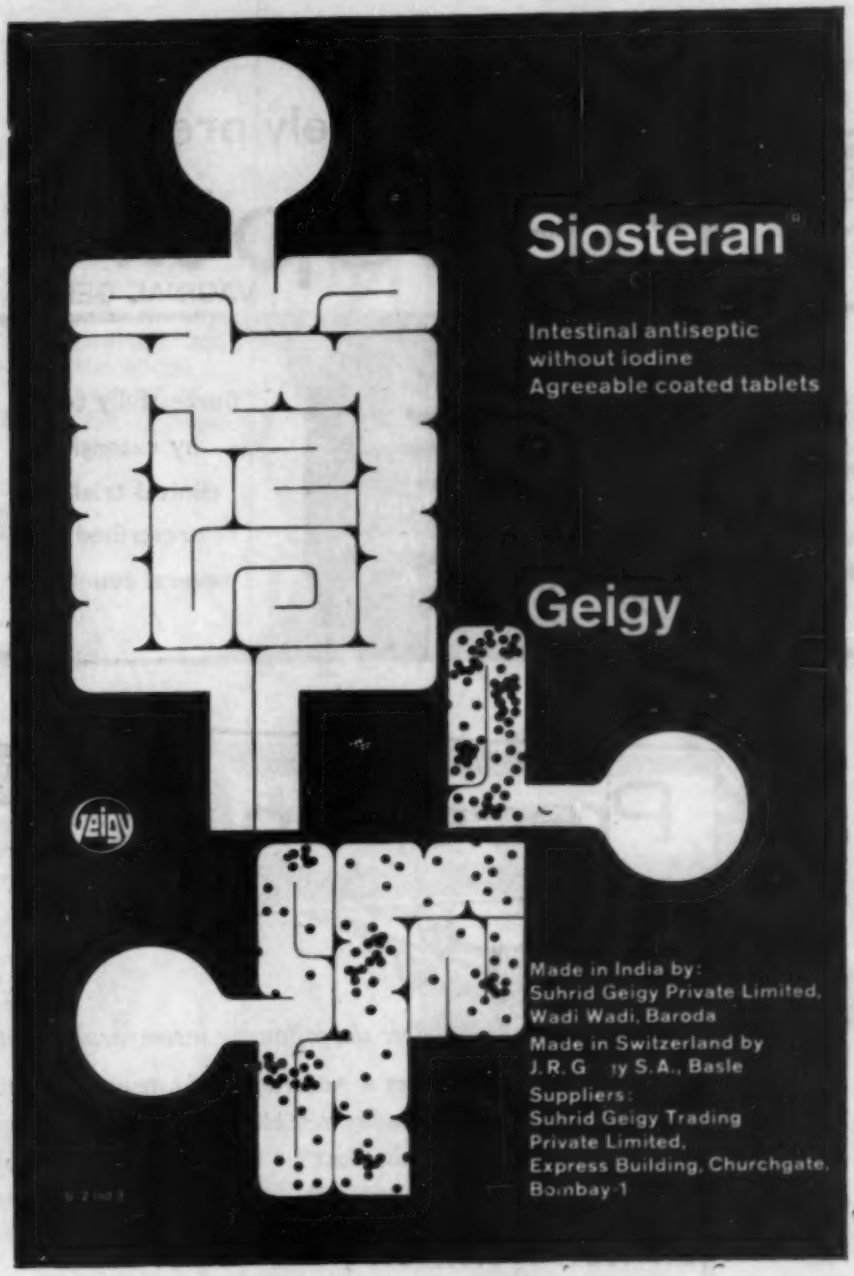
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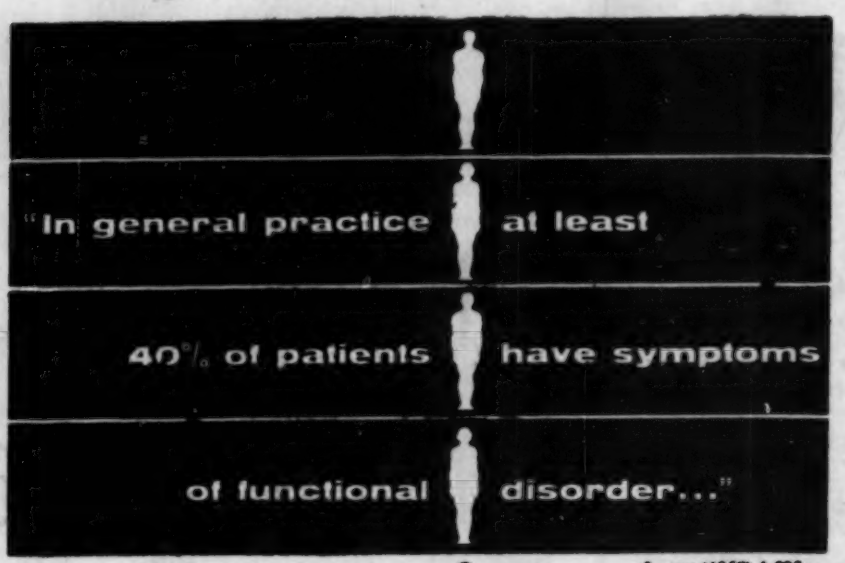

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GENERAL PRACTICE DIGEST

AMOEBIASIS AND AMOEBIC DYSENTERY

Recovery and identification of the parasite is essential for a diagnosis of amoebiasis. During dysenteric attacks amoebae are swept out in the liquid stools and during intermissions cysts are passed in the formed stools. Some people harbour *Entamoeba histolytica* in the bowel but disease or symptoms are virtually unknown among them. These people have 'amoebiasis' and need no specific treatment. Amoebic dysentery and its complications are generally present in persons harbouring the parasite in the tropics.

Treatment of Acute Amoebic Dysentery

In acute clinical attacks emetine hydrochloride should be injected intramuscularly or subcutaneously in dosage of 1 gr. (65 mg.) daily, until the attack stops. Injections for 3 to 5 days usually suffice for this purpose, and should not be continued after arrest of the clinical attack.

Emetine injections will rarely eradicate the primary intestinal protozoal infection—its effect is clinical, not radical (parasitic) cure. Emetine injections should never be extended beyond a 12-day period, and such patients should always be confined to bed as a precaution against toxic effect of emetine on the heart.

Treatment of Complications

Acute emergencies—These are extra-intestinal and are acute emergencies, which if not specifically treated, may be fatal. The infection can travel from the large intestine to the surrounding tissues. If it starts as an embolus from portal circulation, amoebic liver abscess results. If untreated, it can extend to any adjacent organ or tissue—commonly it invades the diaphragm and the right lung An amoebomata results from a combined amoebic and secondary bacterial infection.

A colostomy leaking amoeba-laden matter is followed by amoebic infection of the wound tissues, with a spreading area of cutaneous amoebiasis under the dressing. This also happens to surgical drainage of an amoebic liver abscess, in the absence of specific treatment. In a continuously incontinent patient with clinical amoebiasis rapidly extending cutaneous amoebiasis may develop over the buttocks and perineum. Embolism to the brain or other organs has also been reported.

Liver abscess—Chloroquine is given orally in dosage of 1 g. of the salt initially, and followed by 0·5 g. daily for 6 to 8 days. Such a patient can be treated with emetine and chloroquine concurrently. Chloroquine has action only on the amoebae in the liver. Toxicity due to the drug is manifested by visual defects. If they appear, chloroquine should be stopped.

Along with treatment for extra-intestinal amoebic infections, the primary bowel infection with *E. histolytica* should be attacked with a full course of anti-amoebic treatment.

Radical (Parasitic) Cure of Intestinal Infection

The use of certain antibiotic drugs (e.g., the tetracyclines, erythromycin, spiramycin, etc.), which themselves are not amoebicidal, may be followed by disappearance of the parasitic infection. These antibiotics are believed to alter the associated intestinal bacterial flora essential to the survival of the amoebae in the large intestine. Fumagillin (another antibiotic) is amoebicidal *in vitro*. Paromycin (humatin) is the most recent of the antibiotics claimed to be amoebicidal. It is free from side effects, in the dosage recommended.

Emetine Bismuth Iodine (E.B.I.)—This drug is directly amoebicidal. The recommended dosage is 1 gr. (65 mg.) given orally thrice daily, for 10 days, together with other drugs given similarly or on alternate days over 2 or 3 weeks. It is dispensed as enteric-coated tablets which liberate their contents after 3 or 4 hours' digestion.

Other drugs—Arsenicals (milibis), iodo-oxyquinolines (embequin) are directly amoebicidal. When given alone, they are unsatisfactory. If used at all, they should be given concurrently by mouth with E.B.I. as a supplement, such as on alternate days (with E.B.I.) over 3 weeks.

Chiniofon (4 p.c., water soluble form of iodohydroxyquinoline) can be given as retention enema on days alternating with E.B.I. treatment, after a preliminary wash-out enema. Its action is both directly amoebicidal and antibacterial. It is non-irritant and practically non-absorbable, and promotes cleaning and healing of gross lessions in the large bowel.

Arsenical drugs should be stopped promptly on the appearance of any skin rash.

Newer amoebicidal drugs include phenanthrolines ('entobex'), dichloroacetamides (mebinol, entamide) and diethylaminocresols (camoform). All of them are given by mouth. None of them are superior to E.B.I. in radically curing the intestinal amoebic infection. All of them are free from toxic side effects.

Antibiotics—The tetracycline antibiotics (terramycin, aureomycin) given in doses of 0·5 g. six-hourly for 10 days, produce disappearance of the parasitic infection in about 60 per cent of patients so treated. The antibiotics are, therefore, no improvement over E.B.I. or other amoebicidal drugs. The antibiotics should be given only to such patients as are found refractory to treatment with E.B.I. Tetracycline antibiotics are most effective when given along with other amoebicidal drugs repeatedly.

Harmful Treatment

Long-continued drug treatment, whether sustained or intermittent, for unproved cases of amoebic dysentery is not justified. The infection is readily eradicated by a short intensified course of treatment. Indefinite prolongation can do no more good, but is harmful to the patient both physically and psychologically.

—From an article by A. R. D. Adams, *Brit. M.J.*, **1**: 956, 1960

CURRENT MEDICAL LITERATURE

Allergic Disease in Patients with Adrenal Cortical Hypofunction

CARRYER, H. M., SHERRICK, D. W. AND GASTINEAU, C. F. (*J.A.M.A.*, **172**: 1356, 1960) from the Section of Medicine, Mayo Clinic and Mayo Foundation, write:

Data from 27 patients were analysed in order to determine the relation of adrenal cortical hypofunction to the occurrence of allergic disorders. This group was selected on the basis of evidence of allergic disease, obtained either from the case record or from a personal interview, out of a total of 496 who had been found to have adrenal cortical hypofunction. Among the 496 there were 18 in whom the existing allergic disease showed no correlation with adrenal cortical function and 27 in whom there was (1) a definite time-relation between full development of the hypofunction and appearance or intensification of the allergic disorder or (2) improvement in the allergic disorder as treatment for adrenal cortical hypofunction was implemented. The latter most commonly were in the form of atopic reactions. In 8 of the 27 patients with adrenal cortical hypofunction the administration of cortisone or adrenal extracts ameliorated the atopic symptoms.

Effects of Diuretics upon Serum PBI

SCHREINGART, D. E., PERLMUTTER, M. AND NUMEROFF, M. (*Am. J. M. Sc.*, **239**: 571, 1960) from the Department of Medicine of the Maimonides Hospital of Brooklyn and the Department of Medicine, State University of New York College of Medicine, New York, from a study of the effect of diuretics on serum PBI and thyroidal uptake of radioactive iodine observe:

The acute effects of mercurial diuretics, hydrochlorothiazide and acetazolamide upon the serum PBI levels, 24-hour thyroidal uptake and 24-hour urinary excretion of I_{131} were studied in a group of patients, some of whom were in congestive heart failure with secondary fluid retention.

There was no interference by mercurials upon the determination of serum PBI when Barker's dry-ashing technique was used: its levels remained unchanged at intervals from 4 to 48 hours after the intramuscular injection of meralluride. Neither hydrochlorothiazide nor acetazolamide proluced any acute change of the serum PBI levels.

The administration of mercurials, hydrochlorothiazide or acetazolamide failed to increase ioduresis and had no effect upon the 24-hour thyroidal uptake of I_{131} in normal subjects and also in patients with congestive heart failure.

Potassium Deficiency in Anorexia Nervosa, with Reference to Renal Tubular Vacuolation

WIGLEY, R. D. (*Brit. M. J.*, **2**: 110, 1960) from Palmerston North Public Hospital, New Zealand, writes:

Seventeen reported cases of anorexia nervosa with hypokalaemia are summarised. Eight showed some evidence of renal disorder. Habitual purgation complicated the only case shown to have the tubular lesion of potassium depletion.

Three further cases with hypokalaemia are described, one showing tubular vacuolation.

It is thought that the potassium depletion is due to a deficient intake, aggravated in some cases by vomiting, and in some by purgation. Malabsorption may be more certainly excluded if further cases become available.

Fatal paralysis and possibly irreversible renal changes may occur if this complication is not recognised. Five of the 20 patients had died at the time of reporting.

Conventional treatment should correct the deficit, but oral or intravenous potassium chloride may prove necessary.

Ophthalmic Diagnosis and Management of Impending Cerebrovascular Lesions

BIRGE, H. L. (*J.A.M.A.*, **172**: 1958, 1960) from Associate Ophthalmologist, Hartford Hospital, and Assistant Clinical Professor of Ophthalmology, Yale University, New Haven, writes:

Diplopia is one of the earliest signs of cerebral vascular insufficiency. It may be a complete oculomotor palsy when the lesion is large and late, or it may be so slight that the patient is not aware of it except as an ocular discomfort or refractive disorder. Using the tools of the ophthalmologist—lenses; prisms; and tests of fusion, depth perception, and accommodative power—the examiner can often find these signs of oculomotor weakness long before other neurological findings are apparent. The author classifies the diagnosis of cerebral vascular insufficiency, including such ocular signs and symptoms, gives illustrative patient histories, and brings attention to the management of eye difficulties in patients with strokes.

Pruritus: A Neglected Symptom in Thyrotoxicosis

ELIAKIM, M. AND RACHMILEWITZ, M. (*Israel M. J.*, **18**: 262, 1959, Ref. *J.A.M.A.*, **173**: 89, 1960) write:

Severe pruritus was one of the symptoms of 6 patients with thyrotoxicosis. The itching was generalised, migrating, unpredictable, and often more pronounced at night. No skin lesions were observed, except for dermographia. Scratching afforded no relief. In all instances, itching was one of the first signs to disappear with successful treatment. Ergotamine and tetraethylammonium chloride afforded temporary symptomatic relief of pruritus in 2 patients. All the patients received propylthiouracil. In addition, 3 patients received Lugol's solution and underwent subtotal thyroidectomy. Radioiodine (I^{131}) was given to one patient. Itching usually disappeared from 7 to 10 days after treatment with propylthiouracil began, even before other signs of improvement were noted. Cutaneous vasodilatation and marked instability of the autonomic nervous system are considered the pathogenic factors of pruritus in thyrotoxicosis.

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CONTENTS

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CURRENT TOPIC

SUGGESTIONS FOR WIDER FACILITIES FOR MEDICAL EDUCATION AND MEDICAL CARE IN OUR COUNTRY

R. MAHADEVAN, M.S., F.R.C.S. (ENG.), F.R.C.S. (EDIN.)

Surgeon, General Hospital, Munnar

Formerly Professor of Surgery, Madras Medical College

Almost all our present ills stem from, if I may say so, quarrels among brothers in a house with not enough food to go round. Whether it is provincialism, linguistic fights, or inter-communal rivalry and jealousy, in the ultimate analysis it is due to our poverty. The sorry spectacle of a Minister saying in the morning at one meeting that the teacher's profession is the noblest in the world and teachers must be better paid and the same Minister saying at another meeting in the evening that there is no money and so it cannot be done, is due to our poverty. It is the logical sequence of a man having to face two irreconcilable facts. Napoleon said, not without deep significance, that an army marches on its belly. A famous Dewan of Travancore when presented with several petitions requesting for this relief and that improvement and this help said "That can be done and this can be done, but what can one do if the treasury is empty?" We have to accept the fact that many things are essential but we just have not got the money for it now. Even if we have the money or some good angel thrusts the money on us it will inevitably take time to build up the necessary things. Building up the best of things on a nation-wide basis is bound to be a slow affair. We can take it for our present purpose that we are at a low ebb as regards existing facilities for medical education and medical relief. Our aim is to provide the best. Inevitably we have to go through better and better stages till the best is attained. The one practical way is to make a beginning by utilising to the full our existing facilities. Are we doing it? The answer is "No".

To take one example—Are we utilising to the full the facilities in our existing district headquarters hospitals, deficient though they are in many important essentials? The answer is again "No". Can we do it?—of course "Yes". Is it going to be the best arrangement? No, but it will do for a start. You will find, if the suggestion given below of utilising these institutions for teaching purpses also is put into effect, that the institutions themselves improve. The type of treatment given, and the outlook of the staff entrusted with the responsibilities of teaching students will all change for the better. The enthusiasm of the local people will be on the increase and they will come all out to help. In a thousand ways the whole institution will improve.

Just as there was a central institute of anatomy and physiology at the Madras Medical College and students taught there for the first two years were sent out for the clinical courses to the Stanley and Madura Medical Colleges and as similar arrangements for the Tanjore Medical College exist now, it is possible to organise for the clinical courses also. In a three months' course every year (make it six months if you like) at a central place like the Madras or Stanley Medical College, the basic principles of medicine, surgery, and midwifery can be taught by the professors of the respective subjects and the rest of the nine or six months of the year, students of the batch must be posted for work at the existing larger headquarters hospitals like Trichinopoly. In such arrangements, the number of holidays for the students will have to be curtailed to the barest minimum. The existing regulations stipulate 10 beds for every student taught. In a 500 bedded district headquarters hospital, if not 50 at least thirty students may be trained. If this principle is adopted a much larger number of candidates than now can be admitted each year for the medical course. There are plans to expand the district headquarters hospitals in many other places, e.g., Tirunelveli. In some other districts, the hospitals have already been enlarged.

The district medical officer and the rest of the staff with post-gradnate qualifications must be entrusted with the responsibility of clinical teaching. There must be some relaxation in the existing rules and regulations. It is no use asking a district medical officer at the age of 50 to go and take the M.S. or M.D. before he is considered fit to teach a student about hydrocele or hernias, sinuses and fistulae. I know of an instance where a very good professor after having been a professor for years, was told when he was near fifty that if he should continue as the professor he should take the M.S. In despair he left the institution and went as a district medical officer. The institution lost a good professor. That was all the outcome. In every district headquarters hospital there are enough doctors, "paid and honorary", some of them with post-graduate qualifications. At least people with post-graduate qualifications can be entrusted with teaching work. I like to think that it has not been without meaning that the Government and Universities have designations for the various posts, viz.,

(1) "Lecturer" first,
(2) "Reader" next, and then
(3) "Professor".

When the lecturer begins to lecture, he then only begins to realise that he knows precious little and then begins to read and becomes a "Reader" in the literal sense, not merely in the official sense. Having become a "Reader" he also realises that the bread will be taken out of his mouth if he stops reading and finally he ends up as a professor.

To facilitate getting more people with post-graduate qualifications who may be entrusted with the responsibility of teaching, some of the existing restrictions must be done away with. Many gradnates are eager to take post-graduate training and degrees but are not able to do so because of certain regulations now obtaining at any rate in the Madras University. It is better to have loved and lost than not to have loved at all. A doctor who has prepared and appeared for a post-graduate degree and failed is much better than a doctor

who never gave a thought of taking a post-graduate degree. When one begins to read a subject in great detail then only the vastness of the subject and the comparative ignorance of one's knowledge about it is realised. This has the salutary effect of making one humble and desire to learn more. As far as I can understand, the reasons given for the existing method of selection whereby a few candidates are selected out of a large number, are mainly two:

(1) That no professor can give his individual time to train more than three in a unit.

(2) That the clinical material available in a unit will not be enough for more than three candidates if they are to study the cases fully and properly.

Both the assumptions are open to question from the practical point of view. In the first place, the professor has usually no time to train even three, if individual attention is what is expected. Beyond giving a few post-graduate lectures and a set of clinical demonstrations, nothing more is being done now, nor is anything more possible with the existing state of affairs. Individual attention may be the ideal but this has not been possible. The post-graduate who does not take in this situation quickly will inevitably be lost. He has got to go round, be enthusiastic, see and learn things for himself. Of course he will get guidance if he asks for it and this is how it should be in the matter of post-graduate education. Spoon feeding is not only not required, it should not be there.

The professor, what with his routine work in the hospital, the regular under-graduate lectures, and the necessity for supplementing his meagre pay by private practice has little time left beyond reading up enough to save his skin at the post-graduate lectures, lest some post-graduate should ask some "doubts" and ask for clarification. So, whatever the ideal may be, these are not being achieved by the existing methods. They will not be achieved until many things requiring change are changed and these are not going to happen in the foreseeable future.

As regards the other statement that there is not enough clinical material, I don't think this is correct either. The clinical material that goes untapped in our country can only be compared to the waters of our rivers that go into the sea unutilised. Even if all the doctors and medical students available today are harnessed to establish the "normals" for our country it will take a generation. We simply do not have the "normals" nor do we have accurate information about many diseases. Take only two examples:

(1) If you ask a medical student which is the commonest carcinoma in the human body, very likely he will say carcinoma of the stomach or now-a-days perhaps carcinoma of the lung because one hears so much about this both in the medical literature as well as in the press. If you ask him next how many cases of carcinoma of the stomach he has seen during his three years' work in the wards he will confess that he has seen very few. He will indeed now state that probably his answer was wrong as he has seen more cases of carcinoma in other situations of the body. Such a state of affairs exists because he has read textbooks written by authors of other countries, who naturally lay stress on what is common in their country. We have no textbooks of our own. In a personal survey of malignant growths in our country, compiled from a study of cases admitted to various large hospitals, carcinoma of the stomach was found to account for only 3·5 per cent of all malignant growths. In this study care was taken to include only cases confirmed by biopsy. This finding in fact coincides exactly with figures given by the Tata Memorial Institute, Bombay, where the figures have been arrived at from a much larger series of cases. Yet, the student will continue to say that carcinoma of the stomach is the commonest in our country. Is it his fault? No.

(2) Take a subject like high blood pressure—I find in a place where I now work that it is so common that I began to doubt whether the blood pressure apparatus I am using was at fault, or whether my method of taking the readings was at fault. I began comparing readings taken by two blood pressure apparatuses for each patient. The high blood pressure was there. Then I began comparing the readings taken by other doctors for the same patient. The high blood pressure was still there! Except in one patient, a girl of 17, who had coarctation of the aorta, no other obvious cause was found in any. Intravenous pyelograms taken for some of the patients failed to show any faulty renal function except in one case, where there was a suspicion of a unilateral polycystic kidney. Even in this patient the function of this kidney was very good. There are literally hundreds of patients with high blood pressure seeking treatment in a single institution. The high blood pressure is found in the old and in the young, in the male and the female, in the obese and in the lean, in the multipara and nullipara, during menopausal stage, well before or long after it. Many of these patients have symptoms like giddiness, breathlessness on exertion, lassitude, aching pain all over, sleeplessness, etc., etc. A whole team of specialists can work on this single subject, in one single institute alone and can profit by it.

Thus there is enormous clinical material. A doctor in his private practice can work on these and similar subjects and his work must be taken into consideration. Simply because he has not worked in a "teaching institution", he must not be prevented from appearing for a post-graduate examination. The inevitable answer to this will be "This statement is wrong!" A doctor after 5 years' practice in his speciality can appear for M.D., or M.S., etc. The answer to this is "Ask the doctor who tried to get in under such regulations". He has been prevented, as not having satisfied one clause or other. The frustration among these candidates is enormous. I often wonder why these obstacles are placed in one's own country. God alone knows why. Some time back, a team of doctors left the country to take the Fellowship of England or Edinburgh. Among them were some who had tried to get selected for the post-graduate course here without success. Tired of their trials here, they went to the foreign countries. Yet, a protest was raised in letters to the newspapers stating that there is no necessity for candidates to go to

foreign countries for degrees' and so on. The protest was feeble. It had to be feeble because every one concerned knew what was happening.

By all means let there be regulations stipulating that a candidate can appear for a post-graduate degree only after certain number of years after obtaining the basic qualification of M.B.B.S., say three years as now or even longer if need be. The standard of the examination must of course be kept high. If the candidates do not come up to the standard let them fail. But this selection and prevention thereby of a large number of enthusiastic candidates having a chance to obtain post-graduate qualifications must cease. How a selection committee can go to absurd lengths is illustrated in the following incident. A candidate sent a telegram that the letter asking him to appear before the selection committee reached him so late that he could not possibly do so on the date and time fixed. He had given the correct address. He requested for an interview the next day. All the three members of the Committee belonged to the institution in Madras. I was one of them and I agreed. The second member also agreed. But the chairman refused. He maintained that the intimation asking the candidate to appear for interview on a particular date left his office in time and that it was no fault of his if there had been any postal delay. The candidate appeared the next day and pleaded with the chairman. The chairman was adamant. The candidate was not interviewed. I do not say that selection committees do such things frequently enough to condemn such committees. This is an extreme example. But it illustrates how things organised for a good purpose can go wrong in unreasonable hands. If obstacles like these can be avoided, surely they must be.

As regards the medical relief work for the poor in the villages, the oft-repeated pronouncements that the fresh graduates must go to the villages and work there, are neither fair nor realistic. Either those who are making these statements do not know the difficulties because they have not gone and seen for themselves the conditions existing in the villages or if they have, they just don't care. Such pronouncements serve no useful purpose either in enthusing the fresh graduates or in organising better medical relief for the villages. I asked a doctor, an old student of mine, who resigned within three months of joining Government service as a medical officer as to why he resigned. Here is his answer, "I was posted to a place, access to which was only by a foot-path. I could take my trunk and bedding only over the head of a coolie. There was not even a decent hut to stay in the place. There was not any medicine worth mentioning to give to the sick that came, no material even to stich a wound. The nearest hotel where I could get a cup of coffee was two miles off. I have a wife and children. How am I going to live with them and how is my boy to be educated? I resigned in despair." I quote accurately the substance of the doctor's statement and as far as I can now remember, his very words. This was about 5 years ago.

The answer to such a situation as now is clear. Access to village treatment must be by mobile units from the district or taluk centres. The unit may go round by rotation to different villages on different days. The serious cases must be transported to the nearest taluk or district hospitals for treatment. Non-serious cases may be examined and given the medicines required. Arrangements can easily be made for minor surgical procedures as removing a cyst, opening an abscess or stitching a wound. Patients requiring special investigations may be advised to report at a main centre on a particular date for admission. The medical relief wings of the Stanley and Madras medical colleges conducted by the students, with professors and assistant professors available on the spot for help and guidance, have done splendid work. Similarly the fresh gradnates may be utilised but the senior doctors must be available for help and guidance.

Every doctor, retired or in active practice, willing to join such units must be utilised. Their help must be taken even if they can spare their time for only one day in a week or for the matter of that only one afternoon. There are retired doctors, retired from service or active practice who will be willing to help in such a good cause. The out-of-pocket expenses at least of these doctors must be met. It is not difficult to work out a reasonable scheme on these lines.

Whether the age of retirement from the Government service is 55 or should be fixed at 60 or 65, so long as every doctor able and willing to work is mobilised for the purpose outlined, a move in the right direction has been made. The medical profession has responded splendidly to the call of honorary work. We have only to look at the number of doctors who work at the various Government institutions everywhere and give their best hours of work for nothing.

The suggestions that mobile units must be available and that some allowances must be paid to the doctors may be countered by the argument that these schemes will also cost money and where is the money to come from in a poor country that I talked about initially? The answer is that the amount required can be found by preventing existing wastages. For example, if a careful selection is made, the essential drugs required for distribution by the mobile units can be limited to a few drugs without impairment of the efficiency. These drugs must be in the form of tablets. For bulk supply, a careful choice of the drugs is essential. For the same drug obtainable from one firm at a very cheap rate, another firm may quote an exhorbitant price, because of some addition or alteration which is not of great importance. Often, the more famous the company the higher is the price quoted. Again, some years back I myself purchased electric suction apparatus for the institutions where I worked at a cost of about Rs. 4000/-. These had to be imported then but now electric suction apparatus are made in India which costs only about Rs. 500/- each. I must hasten to add that the Rs. 4000/- apparatus had special features and were worth the Rs. 4000/- paid but the Rs. 500/- apparatus serves the need well enough. A third example where money can be saved is on buildings. Why have enormous buildings for every department of every new college? A large shed with cemented flooring, adequate water

supply, efficient drainage and a wire netting to keep out the crows will do for an anatomy shed. This is just an example. There are many other ways in which money can be saved in building constructions and not all of them necessarily temporary structures. Lecture halls need not have massive walls : doors and windows—and these always cost a lot—can be altogether omitted. A room for locking up costly articles may be provided in the hall. The rest of the lecture hall can be an open shed as it were. Some of the lecture halls at the Madras Christian College, Tambaram, are models of what these should be. There is no wastage. These are not mere temporary or semi-permanent structures. They are permanent structures.

Now, I come to another very important point which requires serious consideration in view of the existing shortage of medical personnel. The entire medical personnel of the public health department must be mobilised for curative work also. They are only eager to help like this. At present they are tolerated by the public as an unavoidable nuisance. While preventative work on a large scale is certainly much more important than treating individuals, as we are short of personnel we have to combine both. The preventative work is not obvious to the ordinary man, whereas the cure of an individual from a serious illness, and the realisation that one's loved ones have been saved by a particular doctor brings the doctor concerned more prestige and more influence with it. In fact a doctor so placed will be able to do better preventative work because people will care to follow his advice. This is a very great advantage of being in the curative side. This aspect is important. These doctors can also combine preventive work during the visits to the villages with the mobile units; for example, they can show health 'films'. If the villagers can be made to understand that by boiling the water they drink and keeping the food they eat so protected as to prevent contamination by flies and dust, enormous number of cases of gastro-enteritis and other bowel troubles can be prevented, this in itself will be a great achievevment.

Summary

To sum up, the concrete suggestions made herein are :

(1) All headquarters hospitals also must be utilised for teaching purposes. The ways and means of achieving this and the advantages gained by this are outlined.

(2) Existing restrictions in taking post-graduate degrees by "selection", must be done away with. As to why this should be done, and the ways and means of getting more personnel with post-graduate degrees are outlined.

(3) It is no use asking the fresh graduates to go to the villages for the purpose of medical relief. Medical relief for the villages is to be obtained by mobile units with centres at district and taluk headquarters. All available medical men inclusive of those who have retired from service or active practice can be mobilised for the purpose.

(4) Lot of saving in money can be made and money found for the requirements outlined in (3) by preventing wastage. How this is to be done has been explained.

(5) The doctors in public health department must be utilised not only for the preventive side but also for the curative side. Indeed this will enable these doctors to do better preventive work.

(6) If some of the suggestions fall short of the ideal, the ideal can be attained only by adopting the above methods. When the time comes modifications can be made.

Conclusion

Criticism is never liked, constructive or otherwise. What is more, what one considers as constructive may be considered as destructive by another. Anyway, in all that I have stated above, I have tried to express as honestly as I can what I think to be correct and useful. I have now put down in writing what I have been thinking over and discussing in my own mind for years. I have done this after satisfying myself that there is no harm done, at any rate by putting it first before a limited medical audience. It is for the medical men to discuss and decide. Let us come to a decision after mature discussion and get on with what is considered good. It is time we act and act boldly.

I started by saying that the main difficulty in our country now is poverty. It is comparable to quarrel among brothers in a house with not enough food to go round. Let me conclude by saying that the primary necessity for our country is hard work. An engineer friend of mine told me that he asked a German engineer as to how his country came up so quickly after having been rased to the ground at the end of the last war. The answer of the German engineer was : "In our country, irrespective of our political affiliations every German has voluntarily undertaken to work 12 hours a day, taking only 8 hours' wages for maintaining himself and his family and willingly working free four hours more for his country." I understand they have scrupulously observed this. This is what is wanted for our country. If we also voluntarily accept this principle and work, there is no doubt whatever that we will march ahead and many of our disabilities will go.

NOTES AND NEWS

U.N. Demographic Report

There are about 2,900 million people in the world, and some 48 million more are added every year, according to the United Nations *Demographic Year-Book* published on August 28, 1960.

Africa is the most prolific continent, with a birth-rate of 45 per thousand. As a region South-East Asia and tropical and Southern Africa go one better—46 per thousand.

At the other end of the scale, Europe's birth-rate is only 19 per thousand. The Isle Of Man is at the bottom of the scale with only 12·1, followed by Sweden with 14·2.

Japan, whose pre-war birth-rate was among the highest, now has one of the lowest.

More than half the world's inhabitants live in four countries—China (660 million), India (403 million), the Soviet Union (209 million) and the United States (178 million).

Britain ranks tenth in size of population, after Japan (92 million), Pakistan, Indonesia, Brazil and West Germany. All these countries have more than 50 million people each.

Children born in Norway, Sweden and Holland have the greatest expectancy of life, according to the United Nations figures. Girls born in those countries can expect to live to be 74 or more and boys to 71.

India remains at the bottom of the scale with a life expectancy of 32. But it is one of the few areas where men live longer than women.

Guinea has the highest death rate—40 per thousand.

People are tending to get married younger in industrialised countries and older in others, the *Year-Book* discloses. The world average is 24 for women and 27 for men.

Albania, Egypt, the Fiji Islands, Costa Rica and Honduras have the youngest brides and French Guiana, Macao and the West Indies the oldest.

The figures show that the 'baby boom' which followed the World War reached its peak in 1946 and 1947.

A chart of birth-rates by age groups since 1949 in ten countries shows that fertility rates for women aged 20 to 24 increased in Australia, England and Wales, West Germany, Jamaica and the United States. The rate decreased in Hungary, Yugoslavia, Israel and Japan, and remained steady in France.

A table of illegitimacy rates in 55 sovereign countries showed that 60 per cent of children were born to unmarried mothers in El Salvador, the Dominican Republic, Honduras, the West Indies, Guatemala and Panama —and less than one per cent in Albania and the United Arab Republic.

Indians—World's Worst Fed People

The Irish are the world's best fed people if calories are any guide, according to the United Nations Food and Agriculture Organisation.

Figures of net food supply per head given in the F.A.O. production yearbook show that 3,500 calories are available daily to the Irishman, 3,430 to the New Zealander and 3,350 to the Dane.

Fourth on the list is the Englishman with 3,260 calories, followed by the Australian, 3,200, the Swiss 3,180, and the Canadian 3,110.

The United States and Argentina run Canada close with 3,100 calories each, followed by Norway with 3,080, Finland 3,070 and Austria, 3,050.

India has the smallest supply of calories per head of all countries listed in the yearbook, 1,800. Her neighbour Pakistan has 2,010.

Turkey has 2,890 calories. Formosa is on top in the Far East with 2,330 calories while Japan's figure is 2,200.

In Soviet Union, Communist China and several other countries, mostly in the Far and Near East and Africa, are left out because statistics from them are not available.

New WHO Area Representative in India

Dr. L. G. Eddey has been appointed WHO Area Representative in India. In this capacity he will advise the WHO Regional Director for South-East Asia on the development of schemes for WHO assistance in India, co-operate with the national Ministry of Health in working out a co-ordinated WHO-assisted programme from year to year, and co-ordinate the activities of the 70 WHO workers in projects throughout the country.

Dr. Eddey has had more than thirty years' experience of public health work, having served as Director of Medical Services in British Guiana, and as Director of Medical Services and later Chief Medical Officer to the Ministry of Health, Gold Coast (now Ghana). He has led the United Kingdom delegations at various international health conferences. After joining WHO in 1955, Dr. Eddey served for a time as a public health specialist in Nepal. For the past three years he has been a public health administrator on the staff of the WHO Regional Office for South-East Asia in New Delhi. —(*WHO Chronicle*, July 1960).

WMA Postgraduate Courses

The following postgraduate courses on Diseases of the Chest has been announced by the World Medical Association.

I. Clinical Cardiopulmonary Physiology to be held on October 24-28, 1960, at Sheraton Towels Hotel, Chicago; Tuition: $100.00 including round table luncheon discussions; Co-Chairmen are Dr. Albert H. Andrews, Associate Clinical Professor of Bronchoesophagology, University of Illinois College of Medicine; Dr. Edwin R. Levine, Assistant Professor of Clinical Medicine, Chicago Medical School.

II. Recent Advances in the Diagnosis and Treatment of Diseases of the Heart and Lungs to be held on November 14-18, 1960, at Park Sheraton Hotel, New York City; Tuition: $100.00 including round table luncheon discussions; Co-Chairmen are Dr. Edgar Mayer, Clinical Professor of Medicine, New York University Postgraduate Medical Centre; Dr. Alfred S. Dooneief, Lecturer in Medicine, Columbia University College of Physicians and Surgeons; Dr. Emil A. Naclerio, Chief, Thoracic Surgical Services, Harlem and Columbus Hospitals.

Additional information may be available from Executive Director, American College of Chest Physicians, 112 East Chestnut Street, Chicago 11, Illinois.

400-Bed Hospital in Congo

India has agreed to set up a 400-bed hospital in troubled Congo at the pressing request of the United Nations.

The entire equipment and the men and medicine would be flown to the Congo and the hospital would start functioning in a fortnight. India which was among the few countries acceptable to the Congo, had agreed to establish the hospital on the understanding that the U.N. would "replace these things here". India would, however, pay the normal salaries of the men. The hospital will be under the command of a Lieutenant-Colonel

from the Indian Army Medical Corps. Other doctors and personnel required for the hospital will also be drawn from the army.

Arrangements are already in hand to fly the equipment and personnel to the Congo soon.

The Nutrition Society, London

The following is the programme of a symposium to be held at the Middlesex Hospital Medical School, London, W. 1, on the 17th December 1960 on Calorie Balance in Man.

Dr. J. V. G. A. Durnin (Institute of Physiology, The University, Glasgow W. 2) on "Physiological Principles"; Dr. O. G. Edholm (M.R.C. Laboratories, London, N.W. 3) on "Environmental factors"; Dr. Raymond Greene (106 Harley Street, London, W. 1) on "Endocrine factors"; Dr. G. C. Kennedy (Department of Experimental Medicine, Cambridge) on "Neurological and psychological factors"; Dr. A. M. Thomson and Dr. F. Hytten (Midwifery Department, University of Aberdeen) on "Calorie balance during pregnancy and lactation"; Dr. E. M. Widdowson (Department of Experimental Medicine, Cambridge) on "Energy balance in early life".

"Talking Brain"

A "talking brain" which might help save lives by warning surgical operating teams of changes in a patient's clinical condition has been invented by Dr. G. Pampiglione, head of the Neuro-physical Departments of the Institute of Child Health and of the hospital for sick children in Grat Ormond Street. He was helped by Mr. N. Picton-Robinson, his technical assistant.

The machine translates the electrical activity of the brain into audible signals which can be heard by the operating team through a small earphone or loud-speaker. The surgeon can then absorb the information transmitted without taking his eyes off the patient to watch a graph. It was claimed that operations could be made safer because the surgeon and the anaesthetist would receive warning message before a clinical change took place in a patient's body. Close attention to these warning messages would give the team a better chance of taking remedial action.

National Drive Planned against Child-killing Diseases

The S.E. Asia Regional Office of WHO is to assist the Government of India in a plan which will help to make possible a country-wide immunisation campaign against three dangerous killers of babies and young children—diphtheria, whooping cough and tetanus.

Diphtheria, for instance, which occurs both in town and countryside, is responsible for 2,000 to 5,000 admissions every year to hospitals in cities like Calcutta and Bombay and no fewer than 84 per cent of these cases are children between two and ten years of age. Eleven per cent are infants. Only four cases in a hundred are above ten years of age.

Studies carried out in one part of rural India have confirmed that tenanus and tetanus of the new-born are important causes of sickness and death. Whooping cough not only causes much suffering but many deaths occur through secondary complications.

About 13·5 per cent of India's 362 million people are infants and children up to four years of age. One in four of this vast population is in the age group 5-14 years.

At present, the three vaccines required are being produced in India in most inadequate quantities. So a pilot unit for the production of vaccines against these three diseases will be developed at the Central Research Institute, Kasauli. As soon as the most practical methods of preparation has been worked out, standardised and tested, other laboratories (governmental or otherwise) will be encouraged to adopt the approved methods and start production so that, step by step, the entire needs of the country can be met.

Manufacture of the vaccines at Kasauli will be according to technical measures and procedures recommended by WHO, which will assign a consultant to the project. Equipment, apart from that available in the country, will be supplied by UNICEF.

Two workers from the Kasauli Institute are at present in Australia to study vaccine production and immunology, including the production of triple vaccine for these diseases. On their return next year they will work with the staff of the special vaccine production unit. Another worker of the Institute will similarly be trained overseas at a later date.

It is expected that the Institute will be able to produce, in the initial stages, four million c.c.s of vaccine a year and, within three years to reach the target of seven million c.c.s a year.

* * *

To check diphtheria, whooping cough and tetanus amongst children in Calcutta and the neighbouring areas, it has been decided to arrange for immunisation of children with triple antigen at the outdoor sections of the principal hospitals of the City during the usual outdoor hours or at times as may be arranged by the hospitals, on payment of Rupee one for the full course with effect from October 1. Each child will require three injections of triple antigen at intervals of 4 to 6 weeks, which will give him life-long protection against diphtheria, whooping cough and tetanus. The hospitals where arrangements have been made are the Medical College Hospital, Calcutta; the Nilratan Sircar Hospital, Calcutta; the Seth Sukhlal Karnani Memorial Hospital, Calcutta; the Sambhunath Pandit Hospital, Calcutta; the M. R. Bangur Hospital, Tollygunj; the R. G. Kar Hospital, Calcutta; the Carmichael Hospital for Tropical diseases, Calcutta; the Chittaranjan Hospital, 24, Gora Chand Road, Calcutta; the Mayo Hospital, Calcutta; and the Ramakrishna Mission Seva Pratisthan, 99, Sarat Bose Road, Calcutta

The members of the public have been requested to avail themselves of this arrangement for protecting their children against these three serious maladies.

Four-point Programme to Check Cholera in Delhi

A four-point progamme to control spread of cholera in Delhi has been taken in hand, the Health Minister told the Rajya Sabha on 30-8-60.

The most important of the measures taken, the Minister said, was provision of free anti-cholera inoculations at the Town Halls of Delhi and New Delhi, all hospitals and dispensaries, maternity and child welfare centres and zonal offices of the Delhi Corporation. In addition 52 mobile teams were functioning in the Corporation area carrying out mass anti-cholera inoculations. Up to August 26, about six lakh people had been inoculated. Secondly, steps had been taken to improve general sanitation and intensify antifly measures. Thirdly, a close check was being kept on all sources of water supply and wells were being disinfected regularly. Fourthly, people had been warned against using cut fruit and unwholesome food articles exposed to dust and flies.

The Health Minister informed the House that the provisions of the Epidemic Diseases Act had been promulgated in Delhi. He said that between June 1 and August 25, 1960, 261 cholera cases had been diagnosed and of these 21 had proved fatal. Between January 1 and August 26, 1,224 cases of gastro-enteritis (which includes cholera) of which 59 were fatal had been reported.

Mr. Karmarkar said that a special field investigation from the Central Research Institute, Kasauli, had been posted in Delhi to investigate cases of cholera reported from different localities.

In the neighbouring State of U.P. during the week ended August 13, 2,933 cases had occurred which include 1,033 deaths. Punjab had reported 196 cases of cholera including 20 deaths.

The U.P. Government, he said, had informed the Centre that 11,682 cases of gastro-enteritis with 3,444 deaths had been reported from different parts of the State between January 1, and August 13. Among the seriously affected districts are Aligarh, Bulandshahr and Meerut. The State Government had informed the Union Health Ministry that facilities available at the Central Research Institute would be utilised for investigation of cholera outbreaks.

In Punjab, cholera cases had been reported from Kangra, Mohindergarh, Rohtak, Karnal and Gurgaon.

REVIEWS

Medical, Surgical and Gynaecological Complications of Pregnancy—By the Staff of the Mount Sinai Hospital, New York City. Edited by Alan F. Guttmacher, M.D. 1960; The Williams & Wilkins Co., Baltimore, U.S.A.; 10" x 7", pp. x+619; price $16·50.

This book, new of its kind, fulfils the long-felt need of a comprehensive reference book for the use of a practitioner in the speciality of obstetrics. It is commonly recognised and appreciated that the pregnancy state is a physiological change in the constitution of a woman. But during the existence of this state and for a few months after this, the system is vulnerable to various medical, surgical and even gynaecological diseases. The Mount Sinai Hospital, which looks after pregnant patients, has very rightly appreciated the above fact and has provided for the full care of the expectant mother not only of the complications consequent upon pregnancy but also of diseases and troubles of the patient of every category by qualified specialists. The present book is a mine of knowledge gathered from the experience of the various well-known specialists.

The first chapter starts with Heart Disease and the last ends in Congenital Abnormalities. Throughout the text the very latest ideas are incorporated and particular emphasis is laid on the practice obtaining in Mount Sinai Hospital. Over and above these, many bacteriological, pharmacological, electrotherapeutic and various other ancillary subjects have been dealt with arming the practitioner with as much knowledge as may be useful to him.

It is not possible to praise the book adequately. It is recommended for the use of all—students and practitioners alike.

The get-up is very good. Perhaps a few more illustrations would fit in with the tradition and practice of American publications.

MANINDRANATH SARKAR

Essentials of Orthopaedics—By Philip Wiles, M.S., F.R.C.S., F.A.C.S. 3rd edition, 1959; J. & A. Churchill, Ltd., 104 Gloucester Place, London W 1; 10" x 6½", pp. xiv+576; price 70 sh.

This edition of the book shows that the author is conscious of its popularity and is anxious to retain it. The first edition came out at an opportune time when the new editions of older books could not do justice to the revolutionary progress in orthopaedics in the last two decades. Renovations were not enough, the foundation had to be relaid.

The presentation of the subject in this book is pleasing and precise. The size is neither too voluminous nor of the 'tabloid' form. There has been no outstanding advancement since the publication of the second edition. Additions and alterations have been made to enhance its value among a larger group of readers.

It would be difficult to follow the method depicted in fig. 43 (page 56) to find a tender spot in the spine. Very few patients would be able to adopt the 'yogic' posture entailing full degree of flexion of knees, hip and spine.

The pictures on page 77 do not fit in with the admirable get-up of the book. The page looks like one off a popular pictorial.

One gets the feeling on going through the volume that the author has been sketchy in his description of the general skeletal affections. Fair justice could have been done to these without increasing the size of the book by deleting certain portions. Why should infections of the hand be incorporated in a modern treatise on orthopaedics? The same may be said about the diseases of the skin, the nails and certain neurological disorders.

The book is one of the best for whom it is meant, the undergraduates, postgraduates and clinical tutors.

S. K. DATTA

Radiology as a Diagnostic Aid in Clinical Surgery—By Howard Middlemiss, M.D., F.F.R., D.M.R.D. 1960; William Heinemann Medical Books Ltd., 15-16, Queens Street, Mayfair, London W. 1; 9½" x 6", pp. viii+151; price 30sh. net.

In the introduction the author has mentioned that the book has been written for practising surgeons rather than radiologists. A thorough collaboration between the surgeon and the radiologist at every stage is desirable if radiological findings are to help surgical diagnosis. The book obviously is not meant to be an exhaustive treatise but has dealt with the salient features in radiological diagnosis in surgery in all its spheres.

It is better to know that fracture of the carpal scaphoid should be treated on clinical grounds because radiologically it may not often show before ten days. In case of injury to a bone the joints above and below along with the whole bone should be examined. Otherwise, in case of fracture of the lower third of the tibia for instance, an associated fracture of the neck of the fibula may be missed. Similarly dislocation of the radius associated with fracture of the midshaft of the ulna in Monteggia's fracture should not be forgotten. However his faith in the surgeon's finger to detect the edge of a depressed fracture in the skull (as mentioned in p. 8) rather than a skiagram is disputed. A haematoma of the scalp frequently simulates depressed fracture by clinical examination. With modern facilities of radiography a fracture of the base of the skull can be x-rayed in spite of lack of co-operation of the patient.

In page 10, (while discussing methods of detecting swallowed foreign body) the author has rightly stressed the value of soft tissue radiography but undermined the value of contrast medium without sufficient reason. How to estimate the exact site of a foreign body in the eyeball as discussed in page 13 could have been elaborated.

While discussing signs of abdominal emergencies it is rightly pointed out that a fluid level is not always diagnostic of intestinal obstruction and that perforation of an inflamed viscus such as an appendix or colonic diverticulum rarely allows escape of intestinal gas. It is better to use abdominal swab in which a thread is impregnated with contrast medium, alternatively to which is attached a Mitchell clip, to help detection by x-ray if accidentally left in.

That the transverse process of the first thoracic vertebra has an upward tilt will help to tell it from the cervical vertebra. Metastases from a thyroid cancer in the lungs may be more radio-opaque after iodine administration (p. 49). It is good that the author has mentioned the futility of radiology in demonstrating Meckel's diverticulum (p. 56), but could have advised a film in prone position after swallowing a small amount of barium for demonstration of an ulcer in the anterior wall of the stomach. Retrograde jejunogastric intussusception is an entity not often remembered and should be looked for. A warning that there is no definite criteria for a benign ulcer of the stomach is important. While signs of regional ileitis or Crohn's disease are discussed in detail, there is no mention of ileocoecal tuberculosis, possibly because it does not exist in the country the author belongs to. With us in India it is the bigger problem. His description of the amoeboma of the large gut is therefore all the more welcome particularly because it is not generally discussed so well in standard textbooks of radiology. The pointer to distinguish a polyp by its puckering base from a faecal mass is very practical. Hirschsprung's disease is rightly distinguished from megacolon.

It is better to remember that pancreatic disease may cause gall-bladder dysfunction although the gall-bladder is well visualised radiologically. As to the concentrating power of gall-bladder the twelfth rib can conveniently be taken for comparison of density.

Precautions mentioned before making an investigation with the urinary tract are useful and must be observed. The radiological findings in different pathological conditions of the urinary tract are described with an eye to the clinicopathological aetiology. The importance of prone film in hydronephrosis is stressed. To distinguish a cyst from a tumour direct puncture of the suspected tumour and introduction of contrast medium are advised. "Stasis in the lower end of ureters or persistent filling of the whole ureter on either side in the presence of good excretion usually occurs with a significant amount of residual urine in the bladder, and is a warning that the beginning of renal failure is imminent." In fact, this is how radiological findings should be interpreted and such observations are a special feature of the book.

In the discussion on bone pathology, avascular necrosis has been described as the root cause both of the so-called osteochondritis and osteoarthritis and the author has given good reasons to correlate them. In the spine, 'osteophytosis' from spondylosis has been differentiated from osteochondritis by its aetiopathology. Sarcoma supervening on a Paget's disease has special features, in that it is primarily osteolytic and any increase of the osteolytic area in a case of Paget's disease should be looked with suspicion. Osteogenic sarcoma has been discussed from a new angle. As cartilaginous areas in an osteogenic sarcoma are manifest radiologically only by calcification when it occurs, that is taken as a pointer for malignancy. Similarly, a cartilaginous tumour that grows after all the epiphyses of the body have united should be looked with suspicion. In an experienced eye radiological opinion as to whether a cartilaginous tumour is simple or malignant is often more reliable than a histological report.

All recent methods of radiological investigation that are of practical help have been discussed. The main theme of the book has been to stress on the surgeon, the use and also the limitation of radiology and how radiological findings can help only when it is interpreted with a critical and clinical judgment. When an experienced author records his view it is doubly valuable. Though primarily meant for the surgeon, the book will be useful to the radiologist if only because such coordination of clinical with radiological findings is not met with in ordinary textbooks.

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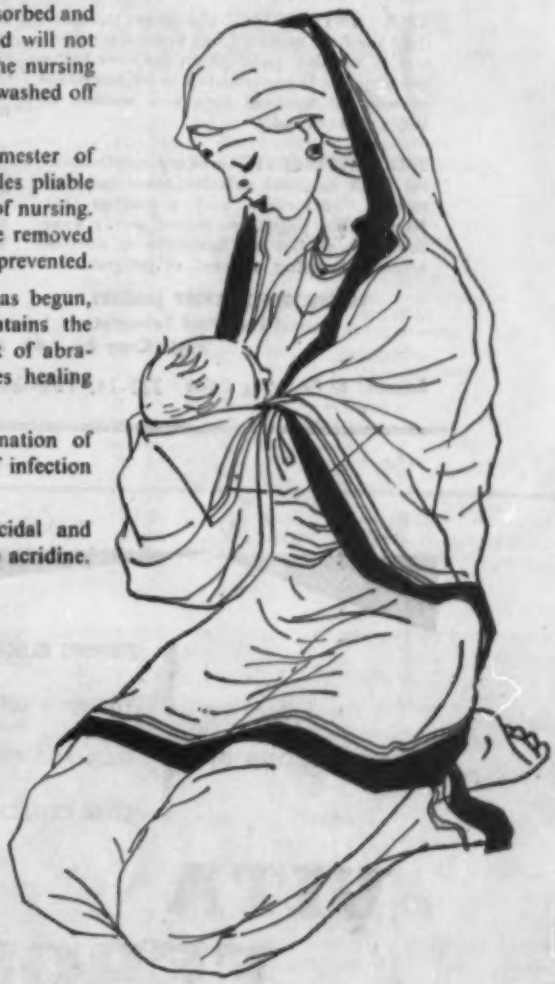

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SUPPLEMENT
Journal of the Indian Medical Association

VOL. 35, No. 7 CALCUTTA OCTOBER 1, 1960

III I.M.A. STUDY TOUR RUSSIA-EUROPE, 1960

The following is the list of members of I.M.A. who left for Russia-Europe trip as participants of the Study Tour this year. They left for Moscow on August 23, 1960 and are expected to return to India on October 6, 1960.

1. Dr. H. N. Shivapuri, President, I.M.A., Lucknow, U.P. (*Leader*).
2. Dr. D. S. Mehra, (Deputy Leader), Delhi-6.
3. Dr. Mrs. M. Balammal, Tiruchirapali, Madras.
4. Dr. S. M. Sen, Jamnagar (N. Gujarat).
5. Dr. Mrs. U. Sen, Jamnagar (N. Gujarat).
6. Dr Y. G. Bodhe, Poona-4.
7. Dr. Mrs. L. Y. Bodhe, Poona-4.
8. Dr. Mrs. Madhumalati Gune, Poona.
9. Dr. Miss Sindhu Paranjpe, Poona-2.
10. Dr. Mrs. Radha Mahadevan, Bombay-19.
11. Dr. Miss. T. G. Dalvi, Kandivali, Bombay-67.
12. Dr. Miss Mohini Mirchandani, Sion Circle, Sion, Bombay.
13. Dr. Mrs. Pramila Gokhale, Kanpur.
14. Dr. Mrs. J. V. Ayer, Mysore.
15. Dr. Mrs. C. A. Joseph, Tirunelveli Town.
16. Dr. Mrs. U. Bhave, Poona-1.
17. Dr. Miss. S. Mirashi, Sholapur.
18. Dr. B. P. Divgi, Bombay-7.
19. Dr. W. R. Korpe, Akola, Maharashtra.
20. Dr. Capt. V. D. Telang, Bombay-7.
21. Dr. M. A. Prabhu, Sholapur.
22. Dr. A. J. Mehta, Madras-1.
23. Dr. V. N. Desai, Bombay-58.
24. Dr S. R. Pradhan, Bombay-28.
25. Dr. D. R. Patwardhan, Maharashtra.
26. Dr. G. D. Adhia, Bombay-14.
27. Dr. V. S. Gadagkar, Poona.
28. Dr. S. M. Chitnis, Deolali.
29. Dr. W. W. Patankar, Poona.
30. Dr. G. R. A. Shaikh, Bombay-3.
31. Dr. R. Kalamegham, Tiruchirapalli-1.
32. Dr. C. K. Nair, Kodavayur, Kerala.
33. Dr. Anilkumar Ray, Calcutta-2.
34. Dr. A. B. Dutt, Calcutta-12.
35. Dr. Amareshwar Ray, Asansol, Bengal.
36. Dr. B. K. Das, Calcutta-23.
37. Dr. A. Mukherji, Calcutta-23.
38. Dr. K. C. Venkatraman, Coimbatore.
39. Dr. K. R. Naidu, Tirunelvelli-6.
40. Dr. M. N. Mahadevan, Bangalore-1.
41. Dr. M. Shivaram, Bangalore-9.
42. Dr. S. Balasunderam, Madras-14.
43. Dr. S. Bhat, Mysore.
44. Dr. B. K. Krishnaiah, Bangalore.
45. Dr. M. A. Narasimhachar, Bangalore-4.
46. Dr. P. D. Donnde, Hyderabad, A.P.
47. Dr. K. Rangacharyulu, Hyderabad, A.P.
48. Dr. J. S. Mankad, Junagadh.
49. Dr. V. T. Bhatta, Petlad, Gujarat.
50. Dr. D. N. Sanyal, Kanpur.
51. Dr. R. K. Jalota, Kanpur.
52. Dr. M. N. Gupta, Kanpur.
53. Dr. R. K. Seth, Kanpur.
54. Dr. Krishanlal Khera, Ambala.
55. Dr. Sat Tandon, Patiala.
56. Dr. N. Bajaj, Delhi-6.
57. Dr. R. K. Handa, New Delhi.
58. Dr. A. M. Mehta, Sidhpur, N. Gujarat.
59. Dr. B. K. Phadnis, Sidhpur, N. Gujarat.
60. Dr. A. K. Chatterji, Bilaspur.
61. Dr. G. N. Bhargava, Banda, U.P.

PARTICIPANTS OF THE STUDY TOUR WHO LEFT DELHI AIRPORT FOR MOSCOW ON AUGUST 23, 1960.

XIII GUJARAT, SAURASHTRA AND KUTCH MEDICAL CONFERENCE, 1960, AHMEDABAD

Under auspices of Gujarat, Saurashtra and Kutch Territorial Branch of the Indian Medical Association the 13th Annual Conference of medical men of Gujarat, Saurashtra and Kutch was held at Ahmedabad on 10-12 June, 1960. About 150 delegates from all over the Gujarat State and a few distinguished members of the medical profession from Bombay and Maharashtra attended the Conference.

The Territorial Council met on 10th June, 1960 under the chairmanship of Dr. R. B. Mehta. About 25 members from various constituent branches attended the Council Meeting. The Council besides dealing with routine business and circulars from I.M.A. adopted the Annual Report of the working of the Territorial Branch for the year 1959-60, passed the audited accounts for the said year and adopted the budget for the year 1960-61. The Council further discussed amendments to Rules and Bye-Laws of the Territorial Branch. The House finally elected Office-Bearers for the year 1960-61.

The Conference was inaugurated on 11th June, 1960 morning at the Sheth Mangaldas Town Hall by H. E. Nawab Mehdi Nawaz Jung, Governor, State of Gujarat. Dr. A. B. Kothari an eminent surgeon and President of the Baroda Municipality presided over the Conference.

INAUGURAL ADDRESS

While inaugurating the Conference H. E. made special reference to the health of the people in Central Gujarat as compared with those of Saurashtra and Kutch who are more healthy and robust and asked the medical profession to look into their problems. He also pointed out that incidents of tuberculosis was very high in this part of country and particularly in the city of Ahmedabad which required immediate attention to and prompt measure of its eradication. He also appealed to the profession to start health education campaign amongst public at large and take such preventive measures so as to create consciousness in the public and thus bring about positive health in the country. He finally declared six scholarships of the value of Rs. 50/- per month, for three medical colleges in the State of Gujarat (two for each college) for poor and deserving students.

WELCOME ADDRESS

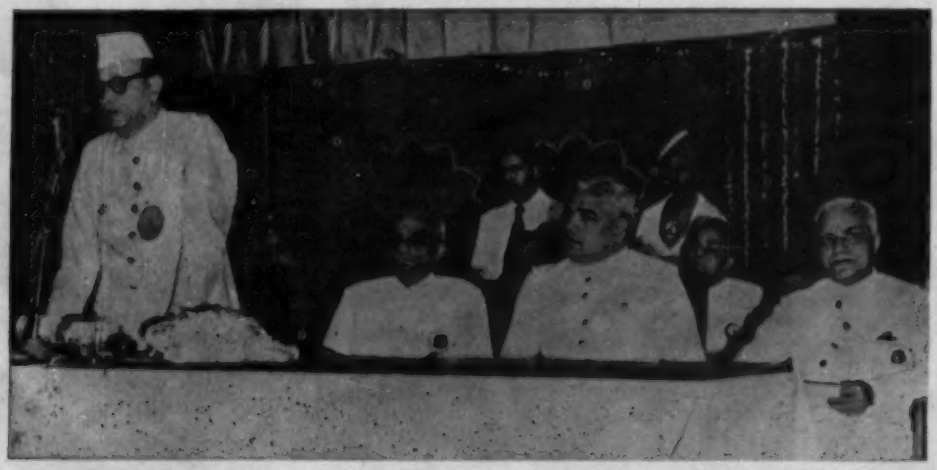
Dr. V. B. Mankad, Chairman of the Reception Committee accorded a hearty welcome to the guests and delegates. In his speech he referred to the medical facilities available at Ahmedabad. He said that Ahmedabad is industrially a leading city of India. It has arrangements for giving the best medical help, especially to the poor. In education, it has made remarkable strides and in civic matters, the municipality is active and progressive.

PRESIDENTIAL ADDRESS

Dr. A. B. Kothari in his Presidential Address dealt with several problems confronting the profession and the public alike. He said the following in course of his address.

Medical Colleges and Needs

"Throughout India, medical colleges are being multiplied to remove the paucity of doctors. True it is, we have not reached the standard of one doctor per 500 people as in U.S.S.R. or one for 750 in U.S.A. or one for 1150 in U.K. If the suggested current standard of one doctor per 1000 is accepted, Gujarat State shall need 20,000 doctors for an estimated population of one crore and sixty lacs and probably more when the revised census would be available by 1962. Women doctors are fewer still. At this juncture, I have to sound a warning that in our zeal to meet the requirements of millions of our countrymen, who unfortunately have inadequate medical facilities, let these increasing medical institutions not be the factories for producing doctors without quality. One must realise that these young graduates shall practise in villages and far off distances from well equipped hospitals of town. Practice differs in towns and villages. In a village a doctor is all in all, a physician, surgeon, gynaecologist, local first aider



From L—R :
1. Nawab Mehdi Nawaz Jung, Governor, Gujarat State, Inaugurating the Conference. 2. Dr. R. B. Mehta, Retiring President, G. S. and K. Territorial Branch. 3. Dr. A. B. Kothari, President-Elect, G. S. and K. Territorial Branch. 4. Dr. M. J. Shah, Director, Medical Services, Gujarat State.

DR. A. B. KOTHARI
THE PRESIDENT OF THE CONFERENCE

DR. V. B. MANKAD
CHAIRMAN, RECEPTION COMMITTEE

for miles around, a dispenser, a preventive doctor, and so on. Thus in medical studies, there are humanities and science. The doctor is to be equipped with biological and human approach. The modern emphasis in the medical education is mainly on preventive and not alone on curative aspect and also on stress of socio-economical, environmental and psychological factors of human life. All medical institutions therefore require well trained and adequate staff. In our state, there are three medical colleges. There is a scope to open up new medical colleges or to double up the admissions. Annually about 400 M.B., B.S. graduates shall then be available. It is indeed praiseworthy that these are the graduates trained in the environmental background and psyche in which they are born and are living and shall continue to live. Their field of work is essentially the patient of such environments. The problem being such, I see no reason why our young men should intend to go and qualify themselves in foreign countries for basic medical degrees. Answer is simple. The selection of student for medical studies is peculiar in our state. One University selects the candidates, on completion of one year Science course after S. S. C. and another keeps the selection pending two years after S. S. C. Inspite of these varied arrangements, it appears that the admission is dependent on candidate's mental abilities i.e. securing first class or higher second class in the University Examinations. Thus, those who are left out in stiff tests, conveniently pave the way earlier or later to study in foreign countries, provided their finances allow. May I put a plea to the authorities concerned to select at least twenty per cent of the candidates, coming from houses where the contributions to the public welfare have been the example set as also where interest in the public welfare has been accorded admiration, and praise, even though the candidate has passed in the third class at the examinations? This automatically craves indulgence of selecting medical men's family members in those twenty per cent.

Another trend seen in the candidates is to go to foreign countries for post-graduate diplomas. It was all right till the British ruled over India. Can this slavish mentality in Modern India be not wiped out once for all! Why friends feel inferiority and backwardness in our degrees of M.D., M.S., etc. and prefer foreign diplomas? I think service selection opinions of authorities that be and the usual public trend that foreign diplomas inculcate more knowledge than degrees in India, are the obvious reasons. I pray you all to put a halt to such notions, educate the public in true perspective and save our currency. I exhort you all to go to foreign country, hereafter only as a visiting doctor to detect and adopt what is good and never to get letters of diplomas to cash them in India.

In our state, besides the three medical colleges teaching modern scientific medicine, there are about six or more colleges of integrated medical course, suddha ayurvedic course and so on. I wish to stress that the integrated course should not be encouraged. Their teachers are more or less using and practising allopathic system of medicine. I have observed that the graduates of integrated medicine, have more faith in cortisones and modern broad spectrum antibiotics than their own specialised chooranas and ashuwas. If the Government wants to really encourage "Ayurveda" pure ayurvedic teaching institutions having teachers of merit and practising Ayurvedic medicine exclusively, be opened, so as to assess the real utility, of ayurvedic medicines.

The post graduate degree in Ayurveda in any of the scientific medical colleges will go a long way to make research in indigenous drugs and enrich the past glory

of Ayurveda. A truly scientific study of a subject can alone ensure its survival in our atomic age of today.

Teachers in medical colleges of the state are of four categories :

(1) Full time teachers—no private practice allowed
(2) Salaried teachers with private practice alllowed
(3) Honorary teachers.
(4) B. M. S. Cl. I and II teachers with private practice allowed.

I commend uniformity of teachers—full time teachers, getting emoluments and pay scales etc. as recommended by Indian Medical Association, and Bhore Committee. Recently a desirability is shown towards a person doing research work. Research is a well coined word for every policy maker. But it is forgotten that research needs aptitude, adequate facilities, non interference and no time limit prescribed. A valuable result of research shall then be evident. But how a research worker is a better teacher for an undergraduate, is indeed incomprehensible to me. Research and teaching should not be mixed up. There are few research workers but more excellent teachers to man our newer increasing medical Colleges. Research in truest sense should not prove a bar for good many teachers.

Our state needs rapid developments in thoracic, cardio vascular, orthopaedic, neurosurgical, anaesthesiology and radiological units.

Another word oft repeated in any speech on doctors is "missonary spirit." I must boldly say that every Indian Doctor be he a practitioner or a consultant has sufficient ingredients of missionary spirit, if not more. Give equivalent facilities and emoluments to our Doctor as are being given to his counterpart praised for having missionery spirit, and I assure he shall zealously prove his merit of missionary spirit. May I appeal to the public at large, please don't haphazardly use this word 'missionary spirit' and create a spot of doubt or undermine the value of an Indian doctor.

Nurses

Nursing profession is gradually attracting Gujarati girls. A few of our Gujarati girls of this state have already topped in second rank at R.N.R.M. (B.P.N.A.) nurses examination of bilingual Bombay State. To continue the tempo of nursing, it is desirable to start Gujarat Provincial Nursing Council straight away and frame the rules for a College of B.Sc. Nursing course. There being a well established Home Science college of the M. S. University, Baroda and Nutritionist course therein, I fervently hope Maharaja Sayaji Rao University shall be able to conduct the B.Sc. degree course in Nursing. It shall not be out of place if as one concerned with the training of nurses for over 8 years, point out that the present nursing courses of R. N. R. M. is rather too stiff and high sounding for trainees entering after S.S.C. In our attempt to raise the standard of nursing the course effects a training of sub-standard doctor, rather than a well trained nurse. Nursing is an art. It is this art that is more important than laying stress on science, in the management of a sick patient. To avoid further paucity of nurses, lay more consideration on nursing art rather than curricula of science. Shortage of midwives, auxiliary nurses, health visitors, Gramsevikas and technicians are equally pressing problems in the medical relief work. Increased admission in teaching institutions shall relieve some shortage. Further deficiency, can be relieved if some of the private nursing homes, having more than ten to fifteen beds are recognised (after proper inspection) as the training centres, for midwifes, auxiliary nurses and technicians.

Relief Camps

This territorial association has arranged surgical camps of its own and the members are also actively participating in the Government organised surgical and eye camps. Response of the villages has been praiseworthy in taking advantage of these camps. Whenever our Government shall need the association's help, the members, I am confident, shall rise to the occasion.

Our Territorial branch has arranged periodicaly refresher courses to improve the standard of treatment by private practitioners. I request the Government to extend the refresher courses in every district hospital as medical science is fast progressing.

Modern man is rapidly making the world narrower and such an unhealthy place to live in, due to a quicker transport by air, water or earth that a very new approach to the public health problems is necessary. The water and air pollutions, radiological hazards in atomic age, traffic accidents due to increased speed and deleterious effects of chemicals used in food, drink and agricultural process as also the various problems in the advancing industrial and psychosomatic medicine shall need a great care, prevention and research to antagonise the bad effects. Osler said "fever war and intestinal infestation with parasites are great enemies of human life. Of these fever ranks first". We, in India have been fortunate to install Malaria Eradication programme after the beginning of D.D.T. era on July 1945 at Dr. Vishwanathan's insistence. 13th World Health Assembly has last month, decided top priority for smallpox eradication. Other communicable diseases like cholera, tuberculosis, parasite infection, trachoma etc. all are likewise, preventible. We are marching towards prevention all round. Thus the benefits accrued by medical relief and medical education are noteworthy. In commercial sense, they are unrenumerative to the state still however they aim at the well being of a citizen and are therefore economic in the long run. Modern medicine cannot work in isolation but demands the aid of other disciplines. We need psychologists in social medicine, anthropologists in health education, physicists and meteriologists in radiation work and so on.

Medium of Instruction

I shall not enter into the controversy of medium of instruction from this platform. I can safely say without any fear of contradiction that a medical student is "student life long" and must therefore possess sufficient knowledge of English to march with the advances of medical sciences all the world over. Modern medicine is international. At the moment, medium of instruction in medical colleges should be kept status quo till properly translated basic medical books are available in regional or national languages and recognised by the authorities.

Drug Industry

Gujarat is a corner stone of pharmaceutical concerns of repute in India. But many mushroom companies are cropping up. They creep in the field in the name of new patents, where actually the same ingredients are permutated and combinated this way or that. Such commercial motive alone is disheartening. Unnecessary medical literature and advertisements are flooded at the doctor's door. Census against advertisements may stop the tall claims of new patents. Enforce employment of medical person adequately qualified to check these patents and their advertisements.

To standardise them all every concern should be made to spend 20 per cent of the total revenue on research alone. The prohibitive costs of medicine come in the way while treating poor patients. Why should the cost be a bar when tackling life and death of the patient. It is the duty of the Government to see that such costly and necessary medicines are made available free in General Hospital. I also urge the Government to give subsidy and such other help to our concerns for the production of various instruments and hospital appliances.

The Drug Act is applicable mostly to us but unfortunately not to quacks. Spurious drugs and adulteration of foods need the strictest control.

School Health

Though children are aptly considered father of the nation, hardly any school gives free lunch and very few give midday milk. The children are susceptible to evil habits and diseases. A medical inspection of all colleges and schools by properly qualified persons should be an annual event rather than three yearly affair. Systematic followups should be introduced. Mass X'ray photography will also help to diagnose latent diseases.

Employees State Insurance Service

Panel system has been preferred by I.M.A. as it keeps patient doctor relationship more cordial. The scheme is in existence in various parts of India. Its progress is being watched with a very keen interest.

Family Planning

Increasing population is a 'Major problem' in our country. It aggravates our food problem as well as unemployment problem. If present rate of 2 per cent annual growth continues, there shall be an addition of 7·8 million people every year to India's population. Improvement in sanitary and health conditions as also the advance in antibiotics and specially in Surgery have caused an added gap between birth rate and death rate. We may if we do not plan, face the danger of 'Population Explosion'. The test of good administration is to act early when symptoms are mild and wait not until the danger creeps in. Medical men, social organisations and the Government must educate the public to reduce the number of children either through (i) Late marriage act (ii) Abstinence (iii) Use of contraceptives and (iv) Sterilisation. As an immediate measure sterilisation (Vasectomy-male sterilisation) Camps, should be begun district wise, to control births.

General

India is busy in drafting general outline of the size and nature of the third Five Year Plan that is to begin from 1961. Government has given priority to agriculture, to make our country self sufficient in food. Our state Government has allocated 40 crores out of 250 crores for social welfare, housing, education and public health. This amount particularly for health is meagre. In question of planning public health, I urge our authorities to consult our Territorial Branch. The Government should also establish health advisory committees wherein the I.M.A. branches should get representation in all over the State. Medical profession should have adequate representation in all not official bodies dealing with social and public health problems. Maternity and child welfare centres should be opened at a distance of every 5 to 7 miles, half of the finance should be from the public and half from the Government."

The Scientific Session was declared open by Dr. Mangaldas J. Shah, Director of Medical Services, State of Gujarat. In his opening address Dr. Shah exhorted the members present to keep in touch with the advances in medical thought, which helps to exchange views and observations, create new ideas and acts as stimulus and incentive for the scientific research. Besides short papers there were two group discussions on Tuberculosis and cardiac diseases which proved very interesting. Special feature of the scientific session was Scientific Exhibition wherein some modern instruments and appliances for chest surgery were exhibited, so also special charts on Diabetes Mellitus, etc. The Scientific Committee had also collected quite a large number of recent medical publications and journals which interested all medical men present.

* * *

The following resolutions were passed at the conference : (1) This Conference records with intense grief the sad demise of the following members of the G. S. and K. Territorial Branch, I.M.A. : (i) Major C. P. Bhatt, Bhavnagar, (ii) Dr. K. V. Thakker, Bhavnagar, (iii) Dr. M. N. Surti, Ahmedabad, (iv) Dr. R. N. Amin, Ahmedabad, (v) Dr. B. L. Vyas, Surat, (vi) Dr. J. F. Lashkari, Surat, (vii) Dr. Liladhar Sheth, Dabhoi, (viii) Dr. B. D. Patanker, Ahmedabad, (ix) Dr. J. M. Sanghvi, Ahmedabad, (x) Dr. I. S. Dave, Baroda, (xi) Dr. T. Salebhoy, Surat and (xii) Dr. Jashubhai Desai, Anand.

Conference extends its condolences and sympathies to the members of the bereaved families.

(2) This Conference whole-heartedly welcomes the election of Dr. Jivraj Mehta, leading member of medical profession of this country and one of the past-presidents of the Indian Medical Association, as a Chief Minister of Gujarat State and sincerely prays that under his leadership and able guidance Gujarat State will rise at the height of its prosperity and will achieve its rightful place amongst other prominent States of this country.

(3) In view of the fact that every year hundreds of Inter Science 'B' Group students are denied admissions to the Medical College and that since there is great shortage of qualified medical men in the State of Gujarat, this Conference urges upon the Government of Gujarat to increase the admissions in all the three Medical Colleges of the Gujarat State as a measure of immediate relief and further requests the Government to make adequate provision for the students desiring to join the Medical College in this State, in the third Five Year Plan.

(4) This Conference urges upon the State Government that the restrictions imposed on the purchase of drugs (dangerous) like Pethidine, Morphia and their derivatives and Cocaine etc. be relaxed and the permits be granted to practitioners of modern medical science only so as to avoid the abuse of these drugs.

(5) Whereas there has been a feeling of inadequacy regarding the provisions made in both, 1st and 2nd Five Year Plans for Public Health and Medical Relief in our State, this Conference urges the State Government to make adequate provisions in the 3rd Five Year Plan for the same. It further requests the State Government to consult the Territorial Branches of the Indian Medical Association in the State of Gujarat before finalising the 3rd Five Year Plan. This Conference also requests the Government that the I.M.A. Branches in the State should get adequate representation in all Committees appointed by the State regarding Public Health and Medical Relief.

(6) Since the new State of Gujarat is now formed, this Conference requests the State Government to expediate the formation of various Statutory Bodies like State Medical Council, Nursing Council, Pharmacy Council, Family Planning Board, State Health Board and such bodies which existed in the composite State of Bombay.

(7) Whereas the health of the students both in schools and colleges is found deteriorating and whereas there is no uniform and regular system of examination and its follow-up, this Conference requests the Government of Gujarat and all other authorities concerned to establish a regular health service for students of all ages and the examinations of the students should be conducted every year and regular records be maintained.

(8) In view of the fact that the Medical Licenciates were eligible as voters of the State Legislative Council in the Graduate Constituency and whereas several diploma and degree holders are enrolled as voters in the Art and Ayurvedic Faculties of all Universities in Gujarat State, this Conference urges upon all Universities of Gujarat and the State Government to enroll the Medi-

cal Licentiate as voter of the Medical Faculties in all the Universities of Gujarat.

(9) This Conference appeals to the local bodies such as Municipal Corporation, Municipalities and Local Boards. etc. to follow the example of former Government of Bombay and extend the age of retirement from 55 years to 58 years of age of all medical personnel in the respective services.

(10) In view of the paucity of nursing personnel all over the country in general and Gujarat State in particular, this conference requests the State Government to recognise private hospitals, nursing homes and maternity homes run by Municipalities and local bodies, after proper inspection, having not less thn 10 beds and having properly qualified staff as training centres for midwives, dias and auxilliary nurses.

(11) This Conference urges the Public Health Department of the State Government of Gujarat to start survey of preventible diseases in the area of Gujarat State and take such measures that would completely eradicate the same.

(12) This Conference requests the Gujarat State Transport Corporation and Municipal Corporation to extend the concession (available to blind patients) for bus fares to T.B. and Cancer patients proceeding to and from the respective clinics/hospitals/sanatoriums (concession to T.B. patients and Cancer patients is already available in Western Railway vide coaching tariff October, 1959).

(13) This Conference requests the State Government of Gujarat to see that those medical practitioners who have registered themselves in a particular branch of medicine e.g. Unani, Homeopathic, Ayurvedic should be allowed to practise in that system of medicine.

(14) This Conference requests the State Government of Gujarat to convert the present schools of integrated medicine into full-fledged Medical Colleges of modern medicine.

(15) This Conference urges upon the local authorities of Gujarat, and Kutch to uniformly upgrade the scales of pay of Graduates and Licenciates of modern medicine in their services on the lines of the scales of pay recommended by Indian Medical Association.

(16) This Conference recommends all the pharmaceutical concerns to utilise medical personnel to supervise and check up their products before these are sent for marketing and their advertisements for publication.

BRANCH NOTES

AGRA BRANCH—A meeting of the branch was held on 20-7-60. Elections for the State and Central President and Vice-Presidents were held. The meeting wanted postponement of the dates of the State Conference. A film show was organised.

ALIGARH BRANCH—An emergent meeting was held on 25-6-60. Dr. S. B. Lal was in the chair. Twenty members were present. The members reviewed the present position of the branch. Office-bearers were elected with Dr. R. K. Maheswari as Secretary and Dr. M. C. Singhal as Joint Secretary for the rest of the session. This election was due to the resignation tendered by Dr. S. M. Lalla and Dr. M. I. Khan.

BANARAS BRANCH—In a meeting held on 18-8-60, the members condoled the death of late Dr. G. P. Dasgupta of Varanasi.

BOMBAY WEST SUBURBAN BRANCH—A general meeting was held on 1-5-60. President Dr. S. C. Sheth was in the chair. An interesting discussion on Gall Bladder Diseases was held when Dr. F. B. Udwadia spoke on medical aspects of gall bladder diseases and surgeon Lt. Commander Dr. M. C. R. Rao of I.N.H.S. "Aswani" spoke on surgical problems and aspects of gall bladder diseases. The following films were shown: (a) Ligation Patent Ductus Arteriosus, (b) Kielland's Forceps, (c) Scotland Dances, (d) This is London and (e) Seagulls. A meeting of the Management Committee was held on 26-5-60 to consider the affairs and activities of the association.

A general meeting was held on Sunday 12-6-60. Vice-President Dr. S. J. Bhatt was in the chair.

Surgeon Dr. R. J. Maneksha gave a talk on Surgical Treatment of Elephantiasis with the aid of slides of cases before and after operation and results obtained by modified surgical techniques.

A general meeting was held on 3-7-60. President Dr. S. C. Sheth was in the chair and more than 30 doctors were present. A brief discussion on physical examination of greater Bombay municipal school children on voluntary basis was held and the idea of rendering voluntary free service by doctors was not approved. A symposium on Retention of Urine was held. Dr. S. T. Thakar spoke on Aetio-Pathological and Medical aspects. Dr. D. J. Buhariwalla spoke on Paediatric Aspects. Dr. D. K. Karanjawala spoke on Surgical Aspects. The following films were shown: (1) Life of Princess Margaret of U.K., (2) Wedding of Princess Margaret of U.K., and (3) A cartoon on health services of U.K.

A general meeting was held on 31-7-60. President Dr. S. C. Sheth was in the chair. Election of one President and three Vice-Presidents of the Central Office of I.M.A. for 1960-61 was held by ballot and the results communicated to Central Office as per rules and instruction from Central Office. The following case demonstrations were held. (1) Dr. S. T. Thakar demonstrated a case of Aneurysm of Aorta, a case of Myxoedema and a case of Congenital Cystic Lung. (2) Dr. R. J. Buhariwala demonstrated a case of Pyogenic Meningitis and an unusual case of Dislocation of Hip Joint associated with Empyema. (3) Dr. M. C. Shah demonstrated a case of Hare-lip. (4) Dr. M. S. Kalambi narrated a case of Mediastinal Cysts. (5) Dr. S. C. Sheth demonstrated a case of Spinocerebellar Disease. Shri C. V. Gopal, Cameraman of the Fims Division of Government of India, Bombay and member cum cameraman of 2nd Indian expedition to Mount Everest narrated his experience of Himalayan mountaineering and scaling the Mount Everest and showed many interesting and fascinating colour slides on the route to Mount Everest; he also gave some idea of physiological stress and strain of very high altitude mountaineering.

A managing committee meeting was held on 31st July, 1960 to transact routine affairs of the association.

COIMBATORE BRANCH—The annual general meeting of the branch was held on 5-6-60. One hundred and fifty members were present. Dr. D. Sundareswaran, the President, delivered the inaugural address. He dealt with the achievements during the past year and also the problems confronting the profession. The members condoled the death of Dr. B. P. B. Naidu of Coimbatore and Dr. Ida Scudder, founder of the Vellore College and Hospitals. The annual reports of 1959 were adopted. Office-bearers for 1960 were elected with Dr. D. Sundareswaran as President; Dr. G. T. Gopalakrishna Naidu as Vice-President; Dr. M. P. Jesudasen as Hony. Secretary; Dr. N. S. Ramamoorthy as Associated Secretary and Dr. S. G. Rajarathnam as Hony. Treasurer. Dr. C. Arumugam and Dr. N. K. Sampath were elected to the Central Council I.M.A. The election was followed by sports, tree-planting etc. Dr. Sridhara Rau delivered a lecture on the problem of Acne.

A meeting of the branch was held on 26-6-60. Seventy-five members were present. Dr. D. Sundareswaran presided. The nomination of one President and 2 Vice-Presidents were conducted. After the routine business, Dr. V. Selvaraj, District Medical Officer, Coimbatore delivered a lecture on problems in the Surgical treatment of Deodenal Ulcer. Dr. G. K. Venkataraman narrated a case history of a child of 2 years having a temperature of 108°, with Priapism.

DEHRI DALMIANAGAR SASARAM BRANCH—A meeting was held on 2-9-60. Dr. J. N. Singh was in the chair. Twentyone members were present. The Secretary acknowledged the receipts of prize bonds of Rs. 20/- from Dr. D. Sanyal. Dr. Sanyal requested the President of the branch to utilise the prize for the building fund of the branch. He also announced a donation of prize bonds of Rs. 25/- towards the building fund of the Central Office, I.M.A. Dr. A. K. Narayan Sinha of Patna gave a talk on Myocardial Infarction which was followed by a lively talk.

DELHI STATE BRANCH—The foundation stone laying of the new building of the branch by Col. Amir Chand was held on 14-8-60. The function was attended by about 500 persons of Delhi. Rajkumari Amrit Kaur was the chief guest. Dr. P. C. Chanda welcomed the guests and members. Dr. G. D. Dalla, Hony. Secretary of the branch, read the history of the branch from the days of its birth till to date. He narrated how the organisation, Delhi Medical Association, was born on 20-8-1914 in a meeting of medical practitioners of Delhi under the presidentship of Dr. Attar Chand. A building for the accommodation of the office was constructed in 1933. With the increase in the activities of the association, when the accommodation in this building became insufficient to cope with the requirements, the construction of this new building was proposed and due to the efforts of Dr. B. K. Sikand, Dr. R. C. Goulatia, Dr. B. B. Bhatia, Dr. P. C. Dhanda, Dr. Prem Narain and Col. Amir Chand this scheme of a building is now towards fulfilment.

Col. Amir Chand laid the foundation stone of the building and addressed the gathering. Col. Amir Chand in his speech narrated in brief, the history of the existing building and made an earnest appeal to the members for funds to complete this new building. The estimated cost would be approximately Rs. 1,68,000/-.

After Col. Amir Chand's speech Raj Kumari Amrit Kaur gave her blessings and appreciated the services rendered by the Delhi Medical Association. She expressed the opinion that the Delhi Medical Association should undertake the work of educating the public and the masses about health problems and family planning etc.

Lt. Col. Amir Chand, President, Laying the Foundation Stone of the New Building

Dr. L. D. Malhotra, Vice-President, thanked all the guests and members of the association for their active participation in the function.

DHAKURIA BRANCH—A general meeting of the branch was held on 24-7-60. Dr. P. N. Majumder presided. The election of Central President and Vice-Presidents were held. The atrocities at Assam were highly condemned by the members and a resolution moved by Dr. A. C. Sengupta, expressed sympathy with the sufferers and urged upon Central Government to trace and penalise the culprits.

GWALIOR BRANCH—A meeting of the branch was held on 11-6-60. Dr. A. N. Ghei gave a talk on Medicine in Welfare State.

A meeting was held on 9-7-60. Dr. Kamal Kishore gave a talk on patient-physicians' relationship in general practice.

Another meeting was held on 6-8-60. Dr. O. B. Mathur spoke on Health Service Extension in Rural Areas in India.

Raj Kumari Amrit Kaur, M.P., Addressing the Gathering at the Foundation-stone Laying Ceremony of the Building of the Delhi State Branch

HASHAN BRANCH—A clinical meeting was held on 30-7-60. Forty members from the district were present. Dr. D. P. Jayaram of Victoria Hospital, Bangalore was the Chief Guest and spoke on Common Diseases of the Skin. Members voted for the election of the President and 3 Vice-Presidents of the Central Office.

HAZARIBAGH BRANCH—A meeting was held on 6-8-60. Twelve members were present. Elections of a president and 3 vice-presidents were conducted. After the routine business was over, Dr. B. N. S. Bhosla spoke on Acute Abdomen and Its Management.

JALPAIGURI BRANCH—A meeting was held on 7-8-60. The members condoled the death of Dr. S. K. Bose, Ex-Principal, Calcutta Medical College.

KARIMNAGAR BRANCH—A clinical meeting was held on 12-8-60. Dr. Ahmed Hussain, Dist. Medical Officer, was in the chair. 28 members were present. President and 3 Vice-Presidents for the Central Office were elected. Dr. Mhd. Afzar Alj read a paper on Dehydration and presented 2 cases of Mongolism. Dr. Ahmed Hussain demonstrated a case of Tuberculosis of Stomach responding well to Laparotomy.

K. G. F. LOCAL BRANCH—A clinical meeting was held on 19-8-60. Nineteen members were present. A symposium on Tuberculosis was held. Dr. Ananda Teertha of K. N. Sanatorium presided over the meeting. Dr. B. N. Krishnamurthy, Dr. B. Vinugopal and Dr. Rajendra Wats spoke on BCG and the Chemotherapy in Tuberculosis, the Surgical Management of Extra-Pulmonary cases of TB and Surgery in Pulmonary TB, respectively. Dr. Ananda Teertha dealt with some aspects in the management of cases of TB with special reference, as in general practice.

KRISHNA DISTRICT BRANCH—A meeting was held on 12-2-60. Dr. C. B. Ethirajulu presided. Cases of Malignant Hypertension, Supra-Condyloid Fracture and Chorea were demonstrated. Dr. K. Venkata Ramasastry spoke on Haemorrhagic Diseases.

A meeting was held on 2-4-60. Dr. C. B. Ethirajulu presided. Dr. P. S. Giri, President of the Andhra State Branch, I.M.A. appealed for enlistment of more members.

A meeting was held on 8-5-60. Dr. K. Subba Rao presided. The members condoled the death of Dr. M. Nageswara Rao, Vice-President of the branch on 6-5-60.

A meeting was held on 15-5-60. Dr. C. B. Ethirajulu presided. Dr. R. Siva Reddy of Sarojini Devi Hospital spoke on Machilipatnam Eye Camp.

A meeting was held on 23-5-60. Dr. Yadgiri Rao of the Machilipatnam Eye Camp gave statistics about attendance in the camp. Dr. P. Ramachander of Sarojini Devi Hospital, Hyderabad spoke on common eye diseases and importance of general practitioner in their management.

A meeting was held on 31-5-60. Members of the public were invited. Dr. B. C. Gangopadhaya, District Collector, Krishna, presided. Dr. V. Raghavachari of Guntur Medical College, spoke on Care of the Eye.

A meeting was held on 6-6-60. Dr. Swarup of Machilipatnam Eye Camp spoke on Injuries of the Cornea. Dr. Yadgiri Rao gave an account of the incidence of eye diseases as observed in the camp. Dr. J. V. R. Sharma, Joint Secretary, Andhra Pradesh State Branch spoke on organisational matter of I.M.A.

A meeting was held on 25-7-60. Dr. T. Narayana Reddi presided. Dr. Reddy was elected president and Dr. S. Hanumantha Rao, vice-president of the branch. Dr. C. R. Naidu, Director of Public Health, Andhra Pradesh gave a detailed account of Malaria Eradication Programme of the Government.

MADRAS CITY BRANCH—A clinical meeting was held on 25-6-60. Dr. G. Sriramulu presided. Dr. K. Venkat Rao of Government Stanley Hospital delivered a lecture on Coronary Artery Disease—its prevention and treatment. He laid stress on the preventive aspect of the disease.

A special general body meeting was held on 25-6-60 to nominate one President and 2 Vice-Presidents of the Madras State Branch. Dr. G. Sriramulu was in the chair.

MADHIPURA BRANCH—A meeting was held on 11-8-60. Thirteen members were present. The meeting considered the subject of medical examination of Life Insurance cases and requested the L.I.C. to treat all registered doctors as their approved doctors. The president and vice-presidents of I.M.A. were elected. The annual subscription of the Branch was fixed at Rs. 12/- per year. The branch requested the Central and all Provincial Governments to convert all posts of Practising Doctors to non-practising posts with suitable pay.

MADURA BRANCH—A meeting was held on 23-7-60. Dr. K. Ramchandran presided. Dr. R. S. Chellappa of Christian Mission Hospital, Madura and his colleagues gave a symposium on Acute Perforations of the Gastro-Intestinal Tract with case demonstrations.

XXXVII ALL-INDIA MEDICAL CONFERENCE, 1960, GAUHATI

The 37th Session of the All-India Medical Conference is going to be held at Gauhati towards the end of December, 1960 and a Scientific Section has been arranged along with it. Interesting and original scientific papers, case notes and similar topics having bearing on medical and allied subjects are invited for the purpose.

All communications regarding the Scientific Programme Sub-Committee should be addressed to Dr. J. Chaudhury (Secretary, Scientific Programme Sub-Committee), Department of Physiology, Assam Medical College, Dibrugarh.

U. P. STATE MEDICAL CONFERENCE, 1960, VARANASI

SILVER JUBILEE SESSION

The Silver Jubilee Session of the XXV U.P. State Medical Conference will be held at Varanasi on 22-23 October 1960. A scientific session will be held and all members are requested to write papers and take particular interest in this session. Further information may be had from the Organising Secretary, Dr. B. R. Thukral, IMA Building, C7/31, Chetganj, Varanasi, U.P.

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